INDEX: VOLUME 57 (1982)

Articles, commentaries, and lead reviews are identified as such: all other entries refer to book reviews.

A

Abbott, R. T. (ed.), Monographs of Marine Mollusca, No. 2, 201
Aboriginal Man Adapting, by R. L. Kirk, 227
Abrahamson, E. W., and S. E. Ostroy (eds.), Molecular Processes in Vision, 454
Adaptation and Intelligence: Organic Selection and Phenocopy, by J. Piaget (transl. S. Eames), 65
Aday, L. A., et al., Health Care in the U.S.: Equitable for Whom?, 231
Ader, R. (ed.), Psychoneuroimmunology, 353
Adoption and alloparental care in mammals and birds, evolution of, by M. L. Riedman, *article*, 405
Advanced Cell Biology, ed. by L. M. Schwartz and M. M. Azar, 313
Advances in Human Genetics, ed. by H. Harris and K. Hirschhorn, Vol. 10, 318
Advances in Marine Biology, ed. by J. H. S. Blaxter et al., Vol. 18 (The Biology of Mysids and Euphausiids), 201
Afifi, A. K., and R. A. Bergman, Basic Neuroscience, 222
Age Pigments, ed. by R. S. Sohal, 357
Aggression bei Affen und Menschen, by W. Angst, 90
Aging: A Challenge to Science and Society, ed. by D. Danon et al., Vol. 1 (Biology), 225
Agris, P. F., The Modified Nucleosides of Transfer RNA: A Bibliography of Biochemical and Biophysical Studies from 1970 to 1979, 62
Aidley, D. J. (ed.), Animal Migration, 340
Ainsworth, G. C., Introduction to the History of Plant Pathology, 198
Alexander, R. D., and D. W. Tinkle (eds.), Natural Selection and Social Behavior: Recent Research and New Theory, 183
Ali, M. A. (ed.), Environmental Physiology of Fishes, 74
Allen, G., Sequencing of Proteins and Peptides, 310
Allen, R. D. (ed.), Cell Motility, Vol. 1, No. 4 (1981), 315
Alloparental care and adoption in mammals and birds, evolution of, by M. L. Riedman, *article*, 405
Altura, B. M. (ed.), Microcirculation, Vol. 1, No. 1 (1981), 233
Altura, B. M., and T. M. Saba (eds.), Pathophysiology of the Reticuloendothelial System, 498
American Journal of Primatology, ed. by J. Erwin, Vol. 1, No. 1 (1981), 207
Amphibian Embryo in Transplantation Immunity, by E. P. Volpe, 189
an der Heiden, U., Analysis of Neural Networks, 88
Analysis of Marine Ecosystems, ed. by A. R. Longhurst, 78
Analysis of Neural Networks, by U. an der Heiden, 88
Anderson, D. J. (ed.), Physiology: Past, Present and Future, 89
Anderson, J. M., Ecology for Environmental Sciences: Biosphere, Ecosystems and Man, 345
Andrews, A. T., Electrophoresis: Theory, Techniques, and Biochemical and Clinical Applications, 452
Angst, W., Aggression bei Affen und Menschen, 90
Animal Behaviour—A Systems Approach, by F. M. Toates, 349
Animal Identification: A Reference Guide, ed. by R. W. Sims, Vol. 1 (Marine and Brackish Water Animals), Vol. 2 [Land and Freshwater Animals (Not Insects)], 73
Animal Identification: A Reference Guide, ed. by D. Hollis, Vol. 3 (Insects), 73
Animal Migration, ed. by D. J. Aidley, 340
Animal Migration, Orientation, and Navigation, ed. by S. A. Gauthreaux, Jr., *commentary*, 293
Animal Osmoregulation, by J. C. Rankin and J. Davenport, 341
Animal Physiology: Adaptations in Function, by F. R. Hainsworth, 210
Animal Play Behavior, by R. Fagen, 89
Animal Rights and Human Morality, by B. E. Rollin, 481

Animal Suffering, by M. S. Dawkins, 481
Animals in Research, ed. by D. Sperlinger, 481
Animals of the Tidal Marsh, by F. C. Daiber, 339
Annelida, by B. Christensen, 318
Annual Review of Nutrition, ed. by W. J. Darby, Vol. 1, 357
Annual Reviews Reprints: Cell Membranes, 1978–1980, compiled by L. J. Mullins, 64
Annual Variation of Daily Energy Expenditure by the Black-billed Magpie: A Study of Thermal and Behavioral Energetics, by J. N. Mugaas and J. R. King, 339
Another Woman That Never Existed, by D. Symons, *lead review of* The Woman That Never Evolved, by S. B. Hrdy, 297
Applewhite, P. B., Molecular Gods: How Molecules Determine Our Behavior, 487
Application of Ion-Selective Microelectrodes, ed. by T. Zeuthen, 458
Applications of Soil Physics, by D. Hillel, 237
Aquatic and Wetland Plants of Southeastern United States: Dicotyledons, by R. K. Godfrey and J. W. Wooten, 194
Aquatic Ecosystems: An Operational Research Approach, by J. E. Beyer, 485
Archives of the Peat Bogs, by Harry Godwin, 329
Arctic Ecosystem, ed. by J. Brown et al., 216
Arnolds, E., Ecology and Coenology of Macrofungi in Grasslands and Moist Heathlands in Drenthe, The Netherlands, Part 1 (Introduction and Synecology), 196
Aschoff, J. (ed.), Biological Rhythms, 221
Ascomycete Systematics; The Luttrellian Concept, ed. by D. R. Reynolds, 191
Atchley, W. R., and D. S. Woodruff (eds.), Evolution and Speciation: Essays in Honor of M. J. D. White, 184
Atlas of Distribution of the Freshwater Fish Families of the World, by T. M. Berra, 340
Atlas of Insect Morphology, by H. Steinmann and L. Zombori, 76
Atlas of Laboratory Animal Haematology, by J. H. Sanderson and C. E. Phillips, 498
Atlas of Medicinal Plants of Middle America: Bahamas to Yucatan, by J. F. Morton, 93
Atlas of World Cultures, by G. P. Murdock, 95
Atoms Within Us, by E. Borek, rev. ed., 68
Auffenberg, W., The Behavioral Ecology of the Komodo Monitor, 339
Autobiology, by G. G. Simpson, *lead review of* The Growth of Biological Thought, by E. Mayr, 437

B

Bacterial Adherence, ed. by E. H. Beachey, 466
Bacterial and Bacteriophage Genetics: An Introduction, by E. A. Birge, 317
Baker, R. (ed.), The Mystery of Migration, 59
Baldwin, J. D., and J. I. Baldwin, Beyond Sociobiology, 462
Ball, I. R., and T. B. Reynoldson, British Planarians, 342
Baltic Sea, ed. by A. Voipio, 451
Barber, H. G., and E. Y. Haworth, A Guide to the Morphology of the Diatom Frustule with a Key to the British Freshwater Genera, 332
Barnett, S. A., Modern Ethology, 90
Barrett, P. H., et al (eds.), A Concordance to Darwin's Origin of Species, First Edition, 303
Basic Microcomputer Models in Biology, by J. D. Spain, 366
Basic Neuroscience, by A. K. Afifi and R. A. Bergman, 222
Basic Physiology, ed. by P. D. Sturkie, 210
Basic Population Genetics, by B. Wallace, 187
Basson, M. D. (ed.), Ethics, Humanism, and Medicine, 91
—— (ed.), Rights and Responsibilities in Modern Medicine, 91
Basson, M. D., et al. (eds.), Troubling Problems in Medical Ethics, 495
Bateson, P. P. G., and P. H. Klopfer (eds.), Perspectives in Ethology, Vol. 4 (Advantages of Diversity), 90
Baumeister, W., and W. Vogell (eds.), Electron Microscopy at Molecular Dimensions: State of the Art and Strategies for the Future, 60
Baxby, D., Jenner's Smallpox Vaccine, 303
Beachey, E. H. (ed.), Bacterial Adherence, 466
Becker, F. F. (ed.) Cancer: A Comprehensive Treatise, Vol. 1 (Etiology: Chemical and Physical Carcinogenesis), 2nd ed., 353
Beekman, E. M. (ed. and transl.), The Poison Tree, 474
Behavioral Ecology of the Komodo Monitor, by W. Auffenberg, 339
Behavioral Pharmacology, by S. D. Iversen and L. L. Iversen, 2nd ed., 223
Being Human, by D. W. Deamer, 227
Belfiore, F., Enzyme Regulation and Metabolic Diseases, 500
Bell, A. P., et al., Sexual Preference: Its Development in Men and Women, 362

——, Sexual Preference: Its Development in Men and Women (Statistical Appendix), 362
Bennett, M. D., et al. (eds.), Chromosomes Today, Vol. 7, 186
Benson, L., and R. A. Darrow, Trees and Shrubs of the Southwestern Deserts, rev. exp. 3rd ed., 333
Berger, A. J., Hawaiian Birdlife, 2nd ed., 207
Berliner, L. J., and J. Reuben (eds.), Biological Magnetic Resonance, Vol. 3, 513
Berra, T. M., An Atlas of Distribution of the Freshwater Fish Families of the World, 340
Beyer, J. E., Aquatic Ecosystems: An Operational Research Approach, 485
Beyond Sociobiology, by J. D. Baldwin and J. I. Baldwin, 462
Bezkorovainy, A., Biochemistry of Nonheme Iron, 312
Bibliography of Aggressive Behavior: A Reader's Guide to the Research Literature, by K. E. Moyer and M. Crabtree, Vol. 2, 89
Bier, O. G., et al., Fundamentals of Immunology, 231
Biochemical Basis of Chemical Teratogenesis, ed. by M. R. Juchau, 323
Biochemistry of Nonheme Iron, by A. Bezkorovainy, 312
Biochemistry of Taste and Olfaction, ed. by R. H. Cagan and M. R. Kare, 180
Biogeochemistry of Ancient and Modern Environments, ed. by P. A. Trudinger et al., 346
Biological Energy Transduction: The Uroboros, by R. F. Fox, 449
Biological Magnetic Resonance, ed. by L. J. Berliner and J. Reuben, Vol. 3, 513
Biological Monitoring of Marine Pollutants, ed. by F. J. Vernberg et al., 347
Biological Recognition and Assembly, ed. by D. S. Eisenberg et al., 451
Biological Relevance of Immune Suppression as Induced by Genetic, Therapeutic and Environmental Factors, ed. by J. H. Dean and M. Padarathsingh, 229
Biological Rhythms, ed. by J. Aschoff, 221
Biologie und Kausalität, by F. M. Wuketits, 174
Biology in Profile, ed. by P. N. Campbell, 58
Biology of Algae and Other Verses, by R. A. Lewin, 513
Biology of Behaviour: Mechanisms, Functions and Applications, by D. M. Broom, 488
Biology of *Botrytis*, ed. by J. R. Coley-Smith et al., 72
Biology of Carbohydrates, ed. by V. Ginsburg and P. Robbins, Vol. 1, 454
Biology of Centipedes, by J. G. E. Lewis, 476
Biology of Desmids, by A. J. Brook, 469
Biology of Mosses, by D. H. S. Richardson, 470
Biology of Plants, by P. H. Raven et al., 3rd ed., 328
Biology Reviews, ed. by V. P. Skulachev, Vol. 1 (Physico-Chemical Aspects), 99
Biomagnetism, ed. by S. N. Erné et al., 512
Biomathematics and Cell Kinetics, ed. by M. Rotenberg, 457
Biomedical Innovation, ed. by E. B. Roberts et al., 495
Biometry, by R. R. Sokal and F. J. Rohlf, 2nd ed., 510
Bioorganic Chemistry, by H. Dugas and C. Penney, 179
Biophysical Ecology, by D. M. Gates, 86
Bioregulators of Reproduction, ed. by G. Jagiello and H. J. Vogel, 321
Biosynthesis of Natural Products, by P. Manitto, 312
Birds and mammals, alloparental care and adoption in, by M. L. Riedman, *article*, 405
Birds of Sable Island, Nova Scotia, by I. A. McLaren, 206
Birge, E. A., Bacterial and Bacteriophage Genetics: An Introduction, 317
Blanchard, J. R., and L. Farrell (eds.), Guide to Sources for Agricultural and Biological Research, 471
Blasecki, J. W. (ed.) Mechanisms of Immunity to Virus-Induced Tumors, 354
Blaxter, J. H. S., et al. (eds.), Advances in Marine Biology, Vol. 18 (The Biology of Mysids and Euphausiids), 201
Bliss, L. C., et al. (eds.), Tundra Ecosystems: A Comparative Analysis, 216
Bloom, A. D., and L. S. James (eds.), The Fetus and the Newborn: Annual Review of the Birth Defects, 1980, 366
Blower, J. G., et al., Estimating the Size of Animal Populations, 211
Blum, M. S., Chemical Defenses of Arthropods, 342
Böck, P., et al., Peroxisomes and Related Particles in Animal Tissues, 314
Boolootian, R. A., and K. A. Stiles, College Zoology, 10th ed., 72
Boreal Ecosystem, by J. A. Larsen, 79

Borek, E., The Atoms Within Us, rev. ed., 68
Borror, D. J., et al., An Introduction to the Study of Insects, 5th ed., 202
Botanical Sciences, *book reviews*, 70, 192, 327, 467
Boucot, A. J., Principles of Benthic Marine Paleoecology, 176
Bowen, I. D., and R. A. Lockshin (eds.), Cell Death in Biology and Pathology, 457
Bownes, M., Hormonal and Genetic Regulation of Vitellogenesis in Drosophila, *article*, 247
Boyer, P. D. (ed.), The Enzymes, 3rd ed., Vol. 14 (Nucleic Acids, Part A), 308
Bradshaw, A. D., and T. McNeilly, Evolution and Pollution, 218
Bradshaw, R. A., and D. M. Schneider (eds.), Proteins of the Nervous System, 2nd ed., 87
Brain, Behavior, and Bodily Disease, ed. by H. Weiner et al., 87
Brauner, F. (ed.), Contributions to Arachnid Systematics in Honor of Willis J. Gertsch (on the Occasion of His Seventy-Fifth Birthday), 202
Breedlove, D. E. (ed.), Flora of Chiapas, Part 1 (Introduction to the *Flora of Chiapas*), 334; Part 2 (Pteridophytes), 335
Brenan, P. (ed.), Index Kewensis Plantarum Phanerogamarum, Suppl. 1971–1975, 469
Breslow, N. E., and N. E. Day, Statistical Methods in Cancer Research, Vol. 1 (The Analysis of Case-Control Studies), 94
Brewer, G. J. (ed.), The Red Cell: Fifth Ann Arbor Conference, 497
British Museum (Natural History), by P. Whitehead, 176
British Planarians, by I. R. Ball and T. B. Reynoldson, 342
Broerse, J. J. (ed.), Radiation Protection: Ion Chambers for Neutron Dosimetry, 93
Brook, A. J., The Biology of Desmids, 469
Broom, D. M., Biology of Behaviour: Mechanisms, Functions and Applications, 488
Brouwer, R., et al. (eds.), Structure and Function of Plant Roots, 471
Brown, J., et al. (eds.), An Arctic Ecosystem, 216
Bulmer, M. G., The Mathematical Theory of Quantitative Genetics, 68
Burnstock, G. (ed.), Purinergic Receptors, 309
Busch, H. (ed.), Nuclear Particles, Part A, Part B, 458
Butler, J. E. (ed.), The Ruminant Immune System, 341
Bynum, W. F., et al. (eds.), Dictionary of the History of Science, 448

C

Cagan, R. H., and M. R. Kare (eds.), Biochemistry of Taste and Olfaction, 180
Calcium and cAMP as Synarchic Messengers, by H. Rasmussen, 453
Calow, P., Invertebrate Biology: A Functional Approach, 201
Camel: Its Evolution, Ecology, Behavior, and Relationship to Man, by H. Gauthier-Pilters and A. I. Dagg, 337
Cameron, I. L., and T. B. Pool (eds.), The Transformed Cell, 181
Campbell, P. N. (ed.), Biology in Profile, 58
Cancer: A Biological and Clinical Introduction, by S. B. Oppenheimer, 507
Cancer: A Comprehensive Treatise, ed. by F. F. Becker, Vol. 1 (Etiology: Chemical and Physical Carcinogenesis), 2nd ed., 353
Cancer Among Black Populations, ed. by C. Mettlin and G. P. Murphy, 507
Cancer Biology, by R. W. Ruddon, 507
Cancer Biology Reviews, ed. by J. J. Marchalonis et al., Vol. 2, Vol. 3, 508
Canning, E. U. (ed.), Parasitological Topics, 357
Care (alloparental) and adoption in mammals and birds, evolution of, by M. L. Riedman, *article*, 405
Carlile, M. J., et al. (eds.), Molecular and Cellular Aspects of Microbial Evolution, 325
Carmichael, W. W. (ed.), The Water Environment: Algal Toxins and Health, 348
Cavalieri, L. F., The Double-Edged Helix: Science in the Real World, 509
Cavalli-Sforza, L. L., and M. W. Feldman, Cultural Transmission and Evolution: A Quantitative Approach, *lead review*, 300
Cell Death in Biology and Pathology, ed. by I. D. Bowen and R. A. Lockshin, 457
Cell Division Cycle, by D. Lloyd et al., 456
Cell Motility, ed. by R. D. Allen, Vol. 1, No. 4 (1981), 315
Cellular and Molecular Aspects of Implantation, ed. by S. R. Glasser and D. W. Bullock, 322
Cellular Basis of Chemical Messengers in the Digestive System, ed. by M. I. Grossman et al., 497
Cellular Biology, *book reviews*, 62, 181, 313, 456
Cellular Immunology: Selected Readings and Critical Commentary, compiled by V. L. Sato and M. L. Gefter, 496
Census Catalogue of World Members of the Bolbitiaceae, by R. Watling and N. M.

Gregory, 195
Central and Peripheral Regulation of Prolactin Function, ed. by R. M. MacLeod and U. Scapagnini, 74
Cerebrospinal Fluid (CSF) and Peptide Hormones, ed. by E. M. Rodríguez and Tj. B. van Wimersma Greidanus, 490
Chadwick, K. H., and H. P. Leenhouts, The Molecular Theory of Radiation Biology, 185
Chaleff, R. S., Genetics of Higher Plants: Applications of Cell Culture, 183
Chandor, A., The Penguin Dictionary of Microprocessors, 367
Chapman, V. J., Seaweeds and Their Uses, 3rd ed., 195
Charles-Edwards, D. A., The Mathematics of Photosynthesis and Productivity, 473
Charlesworth, B., Cultural and Biological Evolution, *lead review of* Cultural Transmission and Evolution: A Quantitative Approach, by L. L. Cavalli-Sforza and M. W. Feldman, 300
Chemical Defenses of Arthropods, by M. S. Blum, 342
Chemistry, by J. M. Widom and S. J. Edelstein, 61
Chen, S.-H., et al. (eds.), Scattering Techniques Applied to Supramolecular and Nonequilibrium Systems, 512
Chibisova, O. I., and L. A. Koziar (eds.), English-Russian Biological Dictionary, 4th ed. 236
Chirikjian, J. G. (ed.), Gene Amplification and Analysis, Vol. 1 (Restriction Endonucleases), 185
Chloroplast Metabolism, by B. Halliwell, 459
Cholesterol Autoxidation, by L. L. Smith, 307
Chorionic Gonadotropin, ed. by S. J. Segal, 70
Christensen, B., Annelida, 318
Christensen, C. M., Edible Mushrooms, 2nd ed. (rev.), 97
Chromosomes Today, ed. by M. D. Bennett et al., Vol. 7, 186
Ciochon, R. L., and A. B. Chiarelli (eds.), Evolutionary Biology of the New World Monkeys and Continental Drift, 208
Clapham, W. B., Jr., Human Ecosystems, 97
Clark, F. E., and T. Rosswall (eds.), Terrestrial Nitrogen Cycles: Processes, Ecosystem Strategies and Management Impacts, 214
Cliff, A. D., and J. K. Ord, Spatial Processes: Models & Applications, 236
Clifford, H. T., and J. Constantine, Ferns, Fern Allies and Conifers of Australia: A Laboratory Manual, 72
Clocks That Time Us, by M. C. Moore-Ede et al., 511
Coccidian Parasites (Protozoa, Apicomplexa) of Carnivores, by N. D. Levine and V. Ivens, 211
Cockburn, A., and E. Cockburn (eds.), Mummies, Disease, and Ancient Cultures, 100
Cockrum, E. L., Mammals of the Southwest, 480
Cocks, L. R. M. (ed.), The Evolving Earth, 177
Cohen, S., Opiate Addiction: The Good Old Days, *lead review of* Dark Paradise: Opiate Addiction in America before 1940, by D. T. Courtwright, 444
Cold Spring Harbor Laboratory, Cold Spring Harbor Symposia on Quantitative Biology, Vol. 45 [Movable Genetic Elements (Part 1, Part 2)], 317
Cold Spring Harbor Symposia on Quantitative Biology, by Cold Spring Harbor Laboratory, Vol. 45 [Movable Genetic Elements (Part 1, Part 2)], 317
Cole, R. J., and R. H. Cox, Handbook of Toxic Fungal Metabolites, 234
Coleman, W., and C. Limoges (eds.), Studies in History of Biology 5, 175
Coley-Smith, J. R., et al. (eds.), The Biology of *Botrytis*, 72
College Zoology, by R. A. Boolootian and K. A. Stiles, 10th ed., 72
Collu, R., et al. (eds.), Pediatric Endocrinology, 505
Color Atlas of Clinical Parasitology, ed. by T. Yamaguchi, 358
Colowick, S. P., and N. O. Kaplan (eds.), Methods in Enzymology, Vol. 77 (Detoxication and Drug Metabolism: Conjugation and Related Systems), 308; Vol. 78 (Interferons, Part A), Vol. 79 (Interferons, Part B), Vol. 82 [Structural and Contractile Proteins, Part A (Extracellular Matrix)], 455
Commentary: Ecology of Migration—Is Magnetic Orientation a Reality?, by D. R. Griffin, 293
Commentary: Science in the Making, by J. Woodcock, 161
Committee on Marine Invertebrates, Marine Invertebrates: Laboratory Animal Management, 342
Communities (*Heliconia*), by R. P. Seifert, *article*, 1
Comparative Neurology of the Telencephalon, ed. by S. O. E. Ebbesson, 86
Compendium of Elm Diseases, by R. J. Stipes

and R. J. Campana, 198
Compendium of Potato Diseases, ed. by W. J. Hooker, 197
Complete Book of Roses, by G. Krüssmann (transl. by G. Krüssmann and N. Raban), 332
Computers and Embryos: Models in Developmental Biology, by R. Ransom, 190
Concordance to Darwin's Origin of Species, First Edition, ed. by P. H. Barrett et al., 303
Connective Tissue Research: Chemistry, Biology, and Physiology, ed. by Z. Deyl and M. Adam, 233
Connelly, T. G., et al. (eds.), Morphogenesis and Pattern Formation, 190
Contemporary Animal Learning Theory, by A. Dickinson, 351
Contributions to Arachnid Systematics in Honor of Willis J. Gertsch (on the Occasion of His Seventy-Fifth Birthday), ed. by F. Brauner, 202
Control of Cellular Division and Development, ed. by D. Cunningham et al., 456
Conway, R. A. (ed.), Environmental Risk Analysis for Chemicals, 482
Copper Deficiency and Toxicity—Acquired and Inherited—in Plants, Animals, and Man, by C. A. Owen, Jr., 356
Copper in Soils and Plants, ed. by J. F. Loneragan et al., 471
Copper Proteins, ed. by T. G. Spiro, 453
Copulatory behavior and differential reproduction, dominance rank and, by D. A. Dewsbury, *article*, 135
Corner, E. J. H., The Life of Plants (reprt.), 327
Counseling in Medical Genetics, by S. Reed, 3rd ed., 94
Courtwright, D. T., Dark Paradise: Opiate Addiction in American before 1940, *lead review*, 444
Cowan, W. M. (ed.), Studies in Developmental Neurobiology: Essays in Honor of Viktor Hamburger, 323
Crawford, R. L., Lignin Biodegradation and Transformation, 61
Crayfishes of Georgia, by H. H. Hobbs, Jr., 476
Creveld, M., Epilithic Lichen Communities in the Alpine Zone of Southern Norway, 217
Cronquist, A., An Integrated System of Classification of Flowering Plants, 331
Crum, H. A., and L. E. Anderson, Mosses of Eastern North America, Vol. 1, Vol. 2, 195
Csaba, G., Ontogeny and Phylogeny of Hormone Receptors, 307
Cultural and Biological Evolution, by B. Charlesworth, *lead review of* Cultural Transmission and Evolution: A Quantitative Approach, by L. L. Cavalli-Sforza and M. W. Feldman, 300
Cultural Transmission and Evolution: A Quantitative Approach, by L. L. Cavalli-Sforza and M. W. Feldman, *lead review*, 300
Cunningham, D., et al. (eds.), Control of Cellular Division and Development, 456
Cunningham's Textbook of Anatomy, ed. by G. J. Romanes, 12th ed., 92
Current Perspectives in Nitrogen Fixation, ed. by A. H. Gibson and W. E. Newton, 468
Cushing, D. H., Fisheries Biology: A Study in Population Dynamics, 2nd ed., 83
Cytomorphogenesis in Plants, ed. by O. Kiermayer, 316

D

Daiber, F. C., Animals of the Tidal Marsh, 339
Dales, R. P. (compiler and ed.), Practical Invertebrate Zoology, 2nd ed., 75
Damask, A. C., Medical Physics, Vol. 2 (External Senses), 233
Danielli, J. F., and M. A. Di Berardino (eds.), Nuclear Transplantation, 182
Danon, D., et al. (eds.), Aging: A Challenge to Science and Society, Vol. 1 (Biology), 225
Darby, W. J. (ed.), Annual Review of Nutrition, Vol. 1, 357
Dark Paradise: Opiate Addiction in America before 1940, by D. T. Courtwright, *lead review*, 444
Darsie, R. F., Jr., and R. A. Ward, Identification and Geographical Distribution of the Mosquitoes of North America, North of Mexico, 203
Darwin, C., The Descent of Man, and Selection in Relation to Sex (Introduction by J. T. Bonner and R. M. May), 185
Dassanayake, M. D. (ed.), A Revised Handbook to the Flora of Ceylon, Vol. 2, 200; Vol. 3, 474
Dawkins, M. S., Animal Suffering, 481
Day, C. E. (ed.), High-Density Lipoproteins, 506
Day, D., The Doomsday Book of Animals, 304
De Omnibus Rebus et Quibusdam Aliis, *book reviews*, 97, 234, 366, 509
de Vogel, E. F., Seedlings of Dicotyledons: Structure, Development, Types, 71

Deamer, D. W., Being Human, 227
Dean, J. H., and M. Padarathsingh (eds.), Biological Relevance of Immune Suppression as Induced by Genetic, Therapeutic and Environmental Factors, 229
Degradative Processes in Heart and Skeletal Muscle, ed. by K. Wildenthal, 93
Delwiche, C. C. (ed.), Denitrification, Nitrification, and Atmospheric Nitrous Oxide, 81
Denitrification, by W. J. Payne, 484
Denitrification, Nitrification, and Atmospheric Nitrous Oxide, ed. by C. C. Delwiche, 81
Descent of Darwin, by A. Kelly, 447
Descent of Man, and Selection in Relation to Sex, by C. Darwin (Introduction by J. T. Bonner and R. M. May), 185
Developing the Amazon, by E. F. Moran, 79
Development of Darwin's Theory, by D. Ospovat, 447
Developmental Stages in the Rhesus Monkey (*Macaca mulatta*), by A. A. M. Gribnau and L. G. M. Geijsberts, 322
Dewsbury, D. A., Dominance Rank, Copulatory Behavior, and Differential Reproduction, *article*, 135
Deyl, Z., and M. Adam (eds.), Connective Tissue Research: Chemistry, Biology, and Physiology, 233
Diatoms in Alaska, by N. Foged, 193
Dibner Library (ed.), Heralds of Science (as Represented by Two Hundred Epochal Books and Pamphlets in the Dibner Library, Smithsonian Institution), rev. ed., 54
Dickinson, A., Contemporary Animal Learning Theory, 351
Dictionary of Scientific Units Including Dimensionless Numbers and Scales, by H. G. Jerrard and D. B. McNeill, 4th ed., 98
Dictionary of the History of Science, ed. by W. F. Bynum et al., 448
Dictionary of Theoretical Concepts in Biology, by K. E. Roe and R. G. Frederick, 58
Differential reproduction, dominance rank, copulatory behavior and, by D. A. Dewsbury, *article*, 135
Differentiation and Neoplasia, ed. by R. G. McKinnell et al., 70
Diffusion and Ecological Problems: Mathematical Models, by A. Okubo, 234
Diptera: Asilidae, by O. Theodor, 76
Distribution of the Human Immunoglobulin Allotypes, by A. G. Steinberg and C. E. Cook, 67
Dixson, A. F., The Natural History of the Gorilla, 480
Dobzhansky, Th., Dobzhansky's Genetics of Natural Populations I–XLIII (ed. by R. C. Lewontin et al.), 320
Dobzhansky's Genetics of Natural Populations I–XLIII, by Th. Dobzhansky (ed. by R. C. Lewontin et al.), 320
Doescher, R. A., Living and Fossil Brachiopod Genera 1775–1979: Lists and bibliography, 306
Dominance Rank, Copulatory Behavior, and Differential Reproduction, by D. A. Dewsbury, *article*, 135
Doomsday Book of Animals, by D. Day, 304
Double-Edged Helix: Science in the Real World, by L. F. Cavalieri, 509
Downer, R. G. H. (ed.), Energy Metabolism in Insects, 312
Dropkin, V. H., Introduction to Plant Nematology, 75
Drosophila vitellogenesis, hormonal and genetic regulation of, by M. Bownes, *article*, 247
Drug Development Research, ed. by H. Lal and S. Fielding, Vol. 1, No. 2 (1981), 234
Drug-Nutrient Interactions, ed. by D. A. Roe, Vol. 1, No. 1 (1981), 503
Dugas, H., and C. Penney, Bioorganic Chemistry, 179
Duke, J. A., Handbook of Legumes of World Economic Importance, 197
Dumpert, K. (transl. by C. Johnson), The Social Biology of Ants, 202
Duncan, W. H., and J. T. Kartesz, Vascular Flora of Georgia: An Annotated Checklist, 200
Dyer, A. F., Investigating Chromosomes, 182
Dynamics of Large Mammal Populations, ed. by C. W. Fowler and T. D. Smith, 479
Dyslexia: Theory and Research, by F. R. Vellutino, 1st paper ed., 492

E

Eason, G., et al., Mathematics and Statistics for the Bio-Sciences, 99
Ebbesson, S. O. E. (ed.), Comparative Neurology of the Telencephalon, 86
Ecological Biogeography of Australia, ed. by A. Keast, Vol. 1 (Part 1: Development of Environment; Part 2: Flora), Vol. 2 (Part 3: Terrestrial Invertebrates; Part 4: Inland Fresh Waters; Part 5: Poikilothermic

Vertebrates), Vol. 3 (Part 6: Homeothermic Vertebrates; Part 7: Aboriginal Man; Part 8: Integration), 212
Ecological Genetics, by D. J. Merrell, 461
Ecology and Coenology of Macrofungi in Grasslands and Moist Heathlands in Drenthe, The Netherlands, by E. Arnolds, Part 1 (Introduction and Synecology), 196
Ecology and Ethology of Fishes, ed. by D. L. G. Noakes and J. A. Ward, 203
Ecology for Environmental Sciences: Biosphere Ecosystems and Man, by J. M. Anderson, 345
Ecology of a Subarctic Mire, ed. by M. Sonesson, 80
Ecology of Algae, by F. E. Round, 485
Ecology of Bruchids Attacking Legumes (Pulses), ed. by V. Labeyrie, 213
Ecology of Highlands, by M. S. Mani and L. E. Giddings, 86
Ecology of Migration: Is Magnetic Orientation a Reality?, by D. R. Griffin, *commentary*, 293
Ecology (population), history of, by S. Kingsland, *article*, 29
Edible Mushrooms, by C. M. Christensen, 2nd ed. (rev.), 97
Education of Koko, by F. Patterson and E. Linden, 338
Ehrlich, P., and A. Ehrlich, Extinction, 343
Eisenberg, D. S., et al. (eds.), Biological Recognition and Assembly, 451
Eisenberg, J. F., The Mammalian Radiations: An Analysis of Trends in Evolution, Adaptation, and Behavior, 479
Electrical Stimulation Research Techniques, ed. by M. M. Patterson and R. P. Kesner, 349
Electron Beam X-Ray Microanalysis, by K. F. J. Heinrich, 60
Electron Microscopy at Molecular Dimensions: State of the Art and Strategies for the Future, ed. by W. Baumeister and W. Vogell, 60
Electrophoresis: Theory, Techniques, and Biochemical and Clinical Applications, by A. T. Andrews, 452
Elementary Mathematical Ecology, by J. Vandermeer, 220
Elements of Microbiology, by M. J. Pelczar, Jr., and E. C. S. Chan, 191
Ellenberg, H., et al. (eds.), Progress in Botany: Morphology, Physiology, Genetics, Taxonomy, Geobotany, 468
Endrenyi, L. (ed.), Kinetic Data Analysis, 368
Energy Metabolism in Insects, ed. by R. G. H. Downer, 312
Engemann, J. G., and R. W. Hegner, Invertebrate Zoology, 3rd ed., 200
English-Russian Biological Dictionary, ed. by O. I. Chibisova and L. A. Koziar, 4th ed., 236
Engstrand, I. H. W., Spanish Scientists in the New World: The Eighteenth-Century Expeditions, 171
Enns, R. H., et al. (eds.), Nonlinear Phenomena in Physics and Biology, 512
Entropy: A New World View, by J. Rifkin, 100
Environmental Atlas of the Potomac Estuary, by A. J. Lippson et al., 483
Environmental Ethics, by K. S. Shrader-Frechette, 343
Environmental Factors in Mammal Reproducton, ed. by D. Gilmore and B. Cook, 189
Environmental Law in Japan, by J. Gresser et al., 215
Environmental Microbiology, by W. D. Grant and P. E. Long, 466
Environmental Physiology of Fishes, ed. by M. A. Ali, 74
Environmental Risk Analysis for Chemicals, ed. by R. A. Conway, 482
Environemntal Sciences, *book reviews*, 77, 212, 343, 482
Enzyme Mathematics, by J.-P. Kernevez, 235
Enzyme Regulation and Metabolic Diseases, by F. Belfiore, 500
Enzymes, ed. by P. D. Boyer, 3rd ed., Vol. 14 (Nucleic Acids, Part A), 308
Enzymes, ed. by H. C. Friedmann, 308
Epidemiological Impact of Psychotropic Drugs, ed. by G. Tognoni et al., 504
Epidermal Keratinocyte Differentiation and Fibrillogenesis, ed. by M. Pruniéras, 64
Epilithic Lichen Communities in the Alpine Zone of Southern Norway, by M. Creveld, 217
Epithelial Ion and Water Transport, ed. by A. D. C. Macknight and J. P. Leader, 182
Erné, S. N., et al. (eds.), Biomagnetism, 512
Erwin, J. (ed.), American Journal of Primatology, Vol. 1, No. 1 (1981), 207
Essential Biology, by H. T. Hendrickson, 57
Essentials of Physiology, by J. F. Lamb et al., 478
Estimating Numbers of Terrestrial Birds, ed. by C. J. Ralph and J. M. Scott, 477
Estimating the Size of Animal Populations, by J. G. Blower et al., 211
Estuarine Ecosystem, by D. S. McLusky, 345
Ethics, Humanism, and Medicine, ed. by M. D.

Basson, 91
Euphrates and Tigris: Mesopotamian Ecology and Destiny, by J. Rzóska, 81
Evans, D. D., and J. L. Thames (eds.), Water in Desert Ecosystems, 219
Evans, L. T., and W. J. Peacock (eds.), Wheat Science: Today and Tomorrow, 197
Evolution and Pollution, by A. D. Bradshaw and T. McNeilly, 218
Evolution and Speciation: Essays in Honor of M. J. D. White, ed. by W. R. Atchley and D. S. Woodruff, 184
Evolution: Genesis and Revelations, with Readings from Empedocles to Wilson, by C. L. Harris, 449
Evolution kosmischer, biologischer und geistiger Strukturen, by A. Unsöld, 184
Evolution of Alloparental Care and Adoption in Mammals and Birds, by M. L. Riedman, *article*, 405
Evolution of the Nervous System, by H. B. Sarnat and M. G. Netsky, 2nd ed., 222
Evolution und Gewalt: Ansätze zu einer biosoziologischen Synthese, by P. Meyer, 185
Evolutionary Biology of the New World Monkeys and Continental Drift, ed. by R. L. Ciochon and A. B. Chiarelli, 208
Evolutionary trees, numerical methods for inferring, by J. Felsenstein, *article*, 379
Evolving Earth, ed. by L. R. M. Cocks, 177
Excitable Cells in Tissue Culture, ed. by P. G. Nelson and M. Lieberman, 314
Extinction, by P. Ehrlich and A. Ehrlich, 343

F

Fagen, R., Animal Play Behavior, 89
Falconer, D. S., Introduction to Quantitative Genetics, 2nd ed., 318
Farr, M. L., How to Know the True Slime Molds, 192
Fauna of the Hortobágy National Park, ed. by S. Mahunka, Vol. 1, 476
Felsenstein, J., Numerical Methods for Inferring Evolutionary Trees, *article*, 379
Fenner, P., and M. C. Armstrong, Research: A Practical Guide to Finding Information, 367
Ferns, Fern Allies and Conifers of Australia: A Laboratory Manual, by H. T. Clifford and J. Constantine, 72
Fetus and the Newborn: Annual Review of Birth Defects, 1980, ed. by A. D. Bloom and L. S. James, 366
Field, H. H., Science Without Numbers: A Defence of Nominalism, 54
Fineman, M., The Inquisitive Eye, 225
Finerty, J. P., The Population Ecology of Cycles in Small Mammals: Mathematical Theory and Biological Fact, 344
Finn, C. A. (ed.), Oxford Reviews of Reproductive Biology, Vol. 3, 465
Fire of Life, by Smithsonian Institution, 176
Fischer, A., and E. F. Smith, The Fischer-Smith Controversy: Are There Bacterial Diseases of Plants? (transl. and prep. by C. L. Campbell), 198
Fischer-Smith Controversy: Are There Bacterial Diseases of Plants?, by A. Fischer and E. F. Smith (transl. and prep. by C. L. Campbell), 198
Fisher, A., and the Editors of Time-Life Books, The Healthy Heart, 226
Fisheries Biology: A study in Population Dynamics, by D. H. Cushing, 2nd ed., 83
Fisheries Management, ed. by R. T. Lackey and L. A. Nielsen, 85
Fishes and the Forest, by M. Goulding, 204
Flint, M. L., and R. van den Bosch, Introduction to Integrated Pest Management, 83
Flohr, H., and W. Precht (eds.), Lesion-Induced Neuronal Plasticity in Sensorimotor Systems, 348
Flora of Chiapas, ed. by D. E. Breedlove, Part 1 (Introduction to the *Flora of Chiapas*), 334; Part 2 (Pteridophytes), 335
Flora of New Mexico, by W. C. Martin and C. R. Hutchins, Vol. 1, Vol. 2, 334
Flowering Plants: Magnolias to Pitcher Plants, by R. H. Mohlenbrock, 200
Foged, N., Diatoms in Alaska, 193
Foliage Plant Production, ed. by J. N. Joiner, 200
For Tyros & Laics, *book reviews*, 59, 176, 304
Foraging Behavior: Ecological, Ethological and Psychological Approaches, ed. by A. C. Kamil and T. D. Sargent, 350
Form and Function in Birds, ed. by A. S. King and J. McLelland, Vol. 2, 477
Fossil Evidence: The Human Evolutionary Journey, by F. E. Poirier, 3rd ed., 365
Foster, H. L., et al. (eds.), The Mouse in Biomedical Research, Vol. 1 (History, Genetics, and Wild Mice), 356
Foundations of Parasitology, by G. D. Schmidt and L. S. Roberts, 2nd ed., 211
Four Anthropologists: An American Science in Its Early Years, by J. Mark, 55

Fowler, C. W., and T. D. Smith (eds.), Dynamics of Large Mammal Populations, 479
Fox, R. F., Biological Energy Transduction: The Uroboros, 449
Frank, R. G., Jr., Harvey and the Oxford Physiologists, 53
Fredrick, J. F. (ed.), Origins and Evolution of Eukaryotic Intracellular Organelles, 62
Freshwater Wetlands: A Guide to Common Indicator Plants of the Northeast, by D. W. Magee, 194
Friedman, R. M., Interferons: A Primer, 306
Friedmann, H. C. (ed.), Enzymes, 308
Fries, J. F., and L. M. Crapo, Vitality and Aging: Implications of the Rectangular Curve, 351
Functional Adaptations of Marine Organisms, ed. by F. J. Vernberg and W. B. Vernberg, 73
Functional Morphology of the Hip and Thigh of the Lorisiformes, by J. E. McArdle, 338
Fundamentals of Immunology, by O. G. Bier et al., 231
Fungal Physiology, by D. H. Griffin, 469
Fungal Wilt Diseases of Plants, ed. by M. E. Mace et al., 196

G

Gamal-Eldin, E., Revision der Gattung *Pulicaria* (Compositae-Inuleae) für Afrika, Makaronesien und Arabien, 199
Gates, D. M., Biophysical Ecology, 86
Gauthier-Pilters, H., and A. I. Dagg, The Camel: Its Evolution, Ecology, Behavior, and Relationship to Man, 337
Gauthreaux, S. A., Jr. (ed.), Animal Migration, Orientation, and Navigation, *commentary*, 293
Gautier, C., et al., Nucleic Acid Sequences Handbook, Vol. 2, 454
Gene Amplification and Analysis, ed. by J. G. Chirikjian, Vol. 1 (Restriction Endonucleases), 185
Gene Expression: Translation and the Behavior of Proteins, ed. by D. M. Prescott and L. Goldstein, 64
Gene Interactions in Development, by L. I. Korochkin (transl. and ed. by A. Grossman), 316
Genera of Australian Lichens (Lichenized Fungi), by R. W. Rogers, 332
General Biology, *book reviews*, 57, 176
Genetic and Environmental Hearing Loss: Syndromic and Nonsyndromic, ed. by L. S. Levin and C. H. Knight, 95
Genetic (and hormonal) regulation of vitellogenesis in Drosophila, by M. Bownes, *article*, 247
Genetic Basis of Development, by A. D. Stewart and D. M. Hunt, 316
Genetic Diseases in Pregnancy: Maternal Effects and Fetal Outcome, ed. by J. D. Schulman and J. L. Simpson, 491
Genetic Engineering in the Plant Sciences, ed. by N. J. Panopoulos, 467
Genetic Variability, by C. Wills, 66
Genetics, ed. by *Scientific American*, 64
Genetics & Evolution, *book reviews*, 64, 183, 316, 459
Genetics and Probability in Animal Breeding Experiments, by E. L. Green, 69
Genetics as a Tool in Microbiology, ed. by S. W. Glover and D. A. Hopwood, 460
Genetics of Higher Plants: Applications of Cell Culture, by R. S. Chaleff, 183
Geobotany II, ed. by R. C. Romans, 329
Gerald, M. C., Pharmacology, 2nd ed., 356
Gerhardt, P., et al. (eds.), Manual of Methods for General Bacteriology, 325
Geyer, R. A. (ed.), Marine Environmental Pollution, 1: Hydrocarbons, 82
Gibson, A. H., and W. E. Newton, Current Perspectives in Nitrogen Fixation, 468
Gillette, D. D., and C. E. Ray, Glyptodonts of North America, 306
Gilmore, D., and B. Cook (eds.), Environmental Factors in Mammal Reproduction, 189
Ginsburg, V., and P. Robbins (eds.), Biology of Carbohydrates, Vol. 1, 454
Glasser, S. R., and D. W. Bullock (eds.), Cellular and Molecular Aspects of Implantation, 322
Glover, S. W., and D. A. Hopwood (eds.), Genetics as a Tool in Microbiology, 460
Glyptodonts of North America, by D. D. Gillette and C. E. Ray, 306
Godfrey, R. K., and J. W. Wooten, Aquatic and Wetland Plants of Southeastern United States: Dicotyledons, 194
Godin, A. J., Wild Mammals of New England, field guide ed., 336
Godwin, H., The Archives of the Peat Bogs, 329
Golub, E. S. (ed.), Immunology, Part 1 (Cell In-

teractions), Part 2 (Regulation), 63
Goodfield, J., An Imagined World, *commentary*, 161
Gordon, J. L. (ed.), Platelets in Biology and Pathology—2, 62
Gorio, A., et al. (eds.), Posttraumatic Peripheral Nerve Regeneration: Experimental Basis and Clinical Implications, 489
Gotshall, D. W., Pacific Coast Inshore Fishes, 2nd rev. ed., 204
Gould, S. J., The Mismeasure of Man, 359
Goulding, M., Man and Fisheries on an Amazon Frontier, 204
——, The Fishes and the Forest, 204
Grant, V., Plant Speciation, 2nd ed., 464
Grant, W. D., and P. E. Long, Environmental Microbiology, 466
Green, E. L., Genetics and Probability in Animal Breeding Experiments, 69
Greene, J. C., Science, Ideology, and World View, 171
Grell, E. (ed.), Membrane Spectroscopy, 309
Gresser, J., et al., Environmental Law in Japan, 215
Gribnau, A. A. M., and L. G. M. Geijsberts, Developmental Stages in the Rhesus Monkey (*Macaca mulatta*), 322
Griffin, D. H. Fungal Physiology, 469
Griffin, D. R., Commentary: Ecology of Migration—Is Magnetic Orientation a Reality?, 293
——, The Question of Animal Awareness, rev. and enl. ed., 221
Gross, E., and J. Meienhofer (eds.), The Peptides: Analysis, Synthesis, Biology, Vol. 3 (Protection of Functional Groups in Peptide Synthesis), 178
Grossman, M. I., et al. (eds.), Cellular Basis of Chemical Messengers in the Digestive System, 497
Growth of Biological Thought, by E. Mayr, *lead review*, 437
Growth Requirements of Vertebrate Cells in Vitro, ed. by C. Waymouth et al., 313
Gueriguian, J. L. (ed.), Insulins, Growth Hormone, and Recombinant DNA Technology, 452
Guern, J., and C. Péaud-Lenoël (eds.), Metabolism and Molecular Activities of Cytokinins, 309
Guide to Sources for Agricultural and Biological Research, ed. by J. R. Blanchard and L. Farrell, 471
Guide to the Morphology of the Diatom Frustule with a Key to the British Freshwater Genera, by H. G. Barber and E. Y. Haworth, 332
Guidelines for Health Manpower Planning: A Course Book, by P. Hornby et al., 96
Guthrie, D. M., Neuroethology: An Introduction, 223

H

Hadden, J. W., and W. E. Stewart II (eds.), The Lymphokines: Biochemistry and Biological Activity, 230
Hainsworth, F. R., Animal Physiology: Adaptations in Function, 210
Hallauer, A. R., and J. B. Miranda. Fo., Quantitative Genetics in Maize Breeding, 186
Halliwell, B., Chloroplast Metabolism, 459
Halvorson, H. O., and K. E. Van Holde (eds.), The Origins of Life and Evolution, 69
Handbook of Biological Psychiatry (in Six Parts), ed. by H. M. Van Praag, Part 4 (Brain Mechanisms and Abnormal Behavior—Chemistry), 504
Handbook of Contemporary Developments in World Ecology, ed. by E. J. Kormondy and J. F. McCormick, 486
Handbook of Legumes of World Economic Importance, by J. A. Duke, 197
Handbook of Marine Mammals, ed. by S. H. Ridgway and R. J. Harrison, Vol. 1 (The Walrus, Sea Lions, Fur Seals and Sea Otter), Vol. 2 (Seals), 480
Handbook of Plant Virus Infection: Comparative Diagnosis, ed. by E. Kurstak, 468
Handbook of Stable Strontium, ed. by S. C. Skoryna, 453
Handbook of Toxic Fungal Metabolites, by R. J. Cole and R. H. Cox, 234
Handbook of Weed and Insect Control Chemicals for Forest Resource Managers, by M. Newton and F. B. Knight, 214
Handbuch der Paläoherpetologie (Encyclopedia of Paleoherpetology), ed. by P. Wellnhofer, Part 2 (Gymnophiona, Caudata), 450
Hanson, E. D., Understanding Evolution, 318
Harris, C. L., Evolution: Genesis and Revelations, with Readings from Empedocles to Wilson, 449
Harris, H., and K. Hirschhorn (eds.), Advances in Human Genetics, Vol. 10, 318
Harrison, P. M., and R. J. Hoare, Metals in Biochemistry, 60

Hartl, D. L., A Primer of Population Genetics, 187
Hartley, G. S., and I. J. Graham-Bryce, Physical Principles of Pesticide Behaviour, Vol. 1, Vol. 2, 484
Hartmann, H. T., et al., Plant Science: Growth, Development, and Utilization of Cultivated Plants, 328
Harvey and the Oxford Physiologists, by R. G. Frank, Jr., 53
Haslam, S. M., and P. A. Wolseley, River Vegetation: Its Identification, Assessment and Management, 345
Hatch, M. D., and N. K. Boardman (eds.), Photosynthesis, 180
Hawaiian Birdlife, by A. J. Berger, 2nd ed., 207
Headstrom, R., Nature Discoveries with a Hand Lens, 305
Health Care Delivery in the United States, ed. by S. Jonas, 2nd ed., 92
Health Care in the U. S.: Equitable for Whom?, by L. A. Aday et al., 231
Health Policy and the Bureaucracy: Politics and Implementation, by F. J. Thompson, 92
Health Sciences, *book reviews*, 91, 228, 351, 493
Healthy Heart, by A. Fisher and The Editors of Time-Life Books, 226
Heinrich, K. F. J., Electron Beam X-Ray Microanalysis, 60
Heliconia insect communities (tropical), by R. P. Seifert, *article*, 1
Hendrickson, H. T., Essential Biology, 57
Hennig, W., Insect Phylogeny, 76
Hepburn, H. R., and G. Mitchell, Milk and Honey, 218
Heralds of Science (as Represented by Two Hundred Epochal Books and Pamphlets in the Dibner Library, Smithsonian Institution), ed. by Dibner Library, rev. ed., 54
Herscowitz, H. B., et al. (eds.), Manual of Macrophage Methodology: Collection, Characterization, and Function, 93
Hickey, M., and C. King, 100 Families of Flowering Plants, 199
High Altitude Physiology, ed. by J. B. West, 210
High-Density Lipoproteins, ed. by C. E. Day, 506
Hilfer, S. R., and J. B. Sheffield (eds.), Ocular Size and Shape Regulation during Development, 464
Hillel, D., Applications of Soil Physics, 237
Histoplasmosis, by J. Schwarz, 231
Historical Plant Geography: An Introduction, by P. Stott, 193
History & Philosophy, *book reviews*, 53, 171, 303, 447
History in the Service of Systematics, ed. by A. Wheeler and J. H. Price, 303
History of population ecology, by S. Kingsland, *article*, 29
History of the Study of Human Growth, by J. M. Tanner, 360
Hobbs, H. H., Jr., The Crayfishes of Georgia, 476
Hobson, K. D., and K. Banse, Sedentariate and Archiannelid Polychaetes of British Columbia and Washington, 201
Hofer, M. A., The Roots of Human Behavior, 96
Hollaender, A., et al. (eds.), Trends in the Biology of Fermentations for Fuels and Chemicals, 327
Hollis, D. (ed.), Animal Identification: A Reference Guide, Vol. 3 (Insects), 73
Honegger, R. E., Threatened Amphibians and Reptiles in Europe, 476
Hook, J. B. (ed.), Toxicology of the Kidney, 355
Hooker, W. J. (ed.), Compendium of Potato Diseases, 197
Hormonal and Genetic Regulation of Vitellogenesis in Drosophila, by M. Bownes, *article*, 247
Hormonal Proteins and Peptides, ed. by C. H. Li, Vol. 10 (β-endorphin), 310
Hormone (juvenile) and the physiological basis of insect polymorphisms, by H. F. Nijhout and D. E. Wheeler, *article*, 109
Hornby, P., et al., Guidelines for Health Manpower Planning: A Course Book, 96
Hospital Special-Care Facilities: Planning for User Needs, ed. by H. Laufman, 496
How to Know the Non-Gilled Mushrooms, by A. H. Smith et al., 2nd ed., 192
How to Know the True Slime Molds, by M. L. Farr, 192
How to Understand Acid-Base, by P. A. Stewart, 179
Hrdina, P. D., and R. L. Singhal (eds.), Neuroendocrine Regulation and Altered Behaviour, 488
Hrdy, S. B., The Woman That Never Evolved, *lead review*, 297
Human Biology, *book reviews*, 94, 224, 359, 491
Human Ecosystems, by W. B. Clapham, Jr., 97
Human Sex Differences: A Primatologist's Perspective, by G. Mitchell, 227
Hume, D. A., and M. J. Weidemann, Mitogenic

Lymphocyte Transformation, 315

I

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, by International Agency for Research on Cancer, Vol. 25 (Wood, Leather and Some Associated Industries), 353

Ibexes in an African Environment, by B. Nievergelt, 486

Identification and Geographical Distribution of the Mosquitoes of North America, North of Mexico, by R. F. Darsie, Jr., and R. A. Ward, 203

Idle Weeds: The Life of a Sandstone Ridge, by D. R. Wallace, 59

Illustrated Manual of Pacific Coast Trees, by H. E. McMinn and E. Maino, 2nd ed., 333

Imagined World, by J. Goodfield, *commentary*, 161

Immunodermatology, ed. by B. Safai and R. A. Good, 234

Immunological Methods, ed. by I. Lefkovits and B. Pernis, Vol. 2, 232

Immunology, ed. by E. S. Golub, Part 1 (Cell Interactions), Part 2 (Regulation), 63

Immunology of Infant Feeding, ed. by A. W. Wilkinson, 354

Implications (political) of inclusive-fitness theory, by R. D. Masters, *article*, 275

Inclusive-fitness theory, political implications of, by R. D. Masters, *article*, 275

Index Kewensis Plantarum Phanerogamarum, ed. by P. Brenan, Suppl. 1971–1975, 469

Index to Illustrations of Living Things outside North America: Where to Find Pictures of Flora and Fauna, by L. T. Munz and N. G. Slauson, 368

Inferring evolutionary trees, numerical methods for, by J. Felsenstein, *article*, 379

Inquisitive Eye, by M. Fineman, 225

Insect communities (*Heliconia*), neotropical, by R. P. Seifert, *article*, 1

Insect Phylogeny, by W. Hennig, 76

Insect Physiology, by W. Mordue et al., 202

Insect polymorphisms, juvenile hormone and, by H. F. Nijhout and D. E. Wheeler, *article*, 109

Insects of Hawaii, ed. by E. C. Zimmerman, Vol. 14 (Diptera: Cyclorrhapha IV, Series Schizophora, Section Calyptratae), 203

Insulins, Growth Hormone, and Recombinant DNA Technology, ed. by J. L. Gueriguian, 452

Integrated System of Classification of Flowering Plants, by A. Cronquist, 331

Interferons: A Primer, by R. M. Friedman, 306

Interior Plantscapes: Installation, Maintenance, and Management, by G. H. Manaker, 199

International Agency for Research on Cancer, IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, Vol. 25 (Wood, Leather and Some Associated Industries), 353

International Cell Biology 1980–1981, ed. by H. G. Schweiger, 62

Introduced Birds of the World, by J. L. Long, 206

Introduction to Integrated Pest Management, by M. L. Flint and R. van den Bosch, 83

Introduction to Quantitative Genetics, by D. S. Falconer, 2nd ed., 318

Introduction to Plant Nematology, by V. H. Dropkin, 75

Introduction to the History of Plant Pathology, by G. C. Ainsworth, 198

Introduction to the Study of Insects, by D. J. Borror et al., 5th ed., 202

Invertebrate Biology: A Functional Approach, by P. Calow, 201

Invertebrate Zoology, by J. G. Engemann and R. W. Hegner, 3rd ed., 200

Investigating Chromosomes, by A. F. Dyer, 182

Ion Transport in Heart, by L. J. Mullins, 501

Is Science Sexist? (and Other Problems in the Biomedical Sciences), by M. Ruse, 304

Is Sociobiology Reactionary? The Political Implications of Inclusive-Fitness Theory, by R. D. Masters, *article*, 275

Iseley, D., Leguminosae of the United States. III. Subfamily Papilionoidae: Tribes Sophoreae, Podalyrieae, Loteae), 333

Isoenzymes, by C. C. Rider and C. B. Taylor, 63

Iversen, S. D., and L. L. Iversen, Behavioral Pharmacology, 2nd ed., 223

J

Jacob, F., The Possible and the Actual, 448

Jacobs, B. L., and A. Gelperin (eds.), Serotonin Neurotransmission and Behavior, 488

Jagiello, G., and H. J. Vogel (eds.), Bioregulators of Reproduction, 321

Jameson, E. W., Jr., Patterns of Vertebrate Biology, 336

Jamieson, B. G. J., The Ultrastructure of the Oligochaeta, 475

Jenner's Smallpox Vaccine, by D. Baxby, 303

Jerrard, H. G., and D. B. McNeill, A Dictionary of Scientific Units Including Dimensionless

Numbers and Scales, 4th ed., 98
Johannes, R. E., Words of the Lagoon, 84
Johanson, D. C., and M. A. Edey, Lucy: The Beginnings of Humankind, 224
Johnsgard, P. A., The Plovers, Sandpipers, and Snipes of the World, 338
Johnson, G. D., The Limits and Relationships of the Lutjanidae and Associated Families, 77
Johnson, L. R. (ed.), Physiology of the Gastrointestinal Tract, Vol. 1, Vol. 2, 230
Joiner, J. N. (ed.), Foliage Plant Production, 200
Jonas, S. (ed.), Health Care Delivery in the United States, 2nd ed., 92
Juchau, M. R. (ed.), The Biochemical Basis of Chemical Teratogenesis, 323
Junge, D., Nerve and Muscle Excitation, 2nd ed., 87
Juvenile Hormone and the Physiological Basis of Insect Polymorphisms, by H. F. Nijhout and D. E. Wheeler, *article*, 109

K

Kamil, A. C., and T. D. Sargent (eds.), Foraging Behavior: Ecological, Ethological, and Psychological Approaches, 350
Karling, J. D., Predominantly Holocarpic and Eucarpic Simple Biflagellate Phycomycetes, 2nd rev. ed., 469
Kausalitätsbegriff und Evolutionstheorie, by F. M. Wuketits, 65
Keast, A. (ed.), Ecological Biogeography of Australia, Vol. 1 (Part 1: Development of Environment; Part 2: Flora), Vol. 2 (Part 3: Terrestrial Invertebrates; Part 4: Inland Fresh Waters; Part 5: Poikilothermic Vertebrates), Vol. 3 (Part 6: Homeothermic Vertebrates; Part 7: Aboriginal Man; Part 8: Integration), 212
Keats, B. J. B., Linkage and Chromosome Mapping in Man, 188
Kelly, A., The Descent of Darwin, 447
Kendall, M. D. (ed.), The Thymus Gland, 505
Kernevez, J.-P., Enzyme Mathematics, 235
Ketchum, B. H., et al. (eds.), Ocean Dumping of Industrial Wastes, 218
Kiermayer, O. (ed.), Cytomorphogenesis in Plants, 316
Kinetic Data Analysis, ed. by L. Endrenyi, 368
King, A. S., and J. McLelland (eds.), Form and Function in Birds, Vol. 2, 477
Kingsland, S., The Refractory Model: The Logistic Curve and the History of Population Ecology, *article*, 29
Kirk, R. L., Aboriginal Man Adapting, 227
Kluge, A. G., The Life History, Social Organization, and Parental Behavior of *Hyla rosenbergi* Boulenger, a Nest-Building Gladiator Frog, 74
Kocher, D. C., Radioactive Decay Data Tables, 355
Kooyman, G. L., Weddell Seal: Consummate Diver, 209
Kormondy, E. J., and J. F. McCormick (eds.), Handbook of Contemporary Developments in World Ecology, 486
Korochkin, L. I., Gene Interactions in Development (transl. and ed. by A. Grossman), 316
Krause, S. (ed.), Molecular Electro-Optics, 236
Krüssmann, G., The Complete Book of Roses (transl. by G. Krüssmann and N. Raban), 332
Kück, H.-U., Struktur und Funktion mitochondrialer DNA bei Pilzen, 452
Kurstak, E. (ed.), Handbook of Plant Virus Infection: Comparative Diagnosis, 468

L

Labeyrie, V. (ed.), The Ecology of Bruchids Attacking Legumes (Pulses), 213
Lackey, R. T., and L. A. Nielsen (eds.), Fisheries Management, 85
Lahue, R. (ed.), Methods in Neurobiology, Vol. 1, Vol. 2, 490
Lal, H., and S. Fielding (eds.), Drug Development Research, Vol. 1, No. 2 (1981), 234
Lamb, J. F., et al., Essentials of Physiology, 478
Landrum, L. R., A Monograph of the Genus *Myrceugenia* (Myrtaceae), 474
Larsen, J. A., The Boreal Ecosystem, 79
Lass, N. J. (ed.), Speech and Language: Advances in Basic Research and Practice, Vol. 5, 493
Laufman, H., (ed.), Hospital Special-Care Facilites: Planning for User Needs, 496
Lead in Man and the Environment, by J. M. Ratcliffe, 501
Lefkovits, I., and B. Pernis (eds.), Immunological Methods, Vol. 2, 232
Left Brain, Right Brain, by S. P. Springer and G. Deutsch, 487
Leguminosae of the United States, by D. Iseley, Part 3 (Subfamily Papilionoidae: Tribes Sophoreae, Podalyrieae, Loteae), 333
Lehrbuch der Paläozoologie, by A. H. Müller,

Vol. 2 (Invertebraten), Part 2 (Mollusca 2–Arthropoda 1), 3rd ed., 177
Lesion-Induced Neuronal Plasticity in Sensorimotor Systems, ed. by H. Flohr and W. Precht, 348
Levin, L. S., and C. H. Knight (eds.), Genetic and Environmental Hearing Loss: Syndromic and Nonsyndromic, 95
Levine, N. D., and V. Ivens, The Coccidian Parasites (Protozoa, Apicomplexa) of Carnivores, 211
Levy, G., and P. Amitai, Scorpiones, 76
Lewi, P. J., and R. P. Marsboom, Toxicology Reference Data—Wistar Rat: Body and Organ Weights, Biochemical Determinations, Hematology and Urinalysis, Compiled at Janssen Pharmaceutica, 93
Lewin, R. A., The Biology of Algae and other Verses, 513
Lewis, J. G. E., The Biology of Centipedes, 476
Li, C. H. (ed.), Hormonal Proteins and Peptides, Vol. 10 (β-Endorphin), 310
Life History, Social Organization, and Parental Behavior of *Hyla rosenbergi* Boulenger, a Nest-Building Gladiator Frog, by A. G. Kluge, 74
Life in Moving Fluids, by S. Vogel, 368
Life of Plants (reprt.), by E. J. H. Corner, 327
Life of Vertebrates, by J. Z. Young, 3rd ed., 335
Lignin Biodegradation and Transformation, by R. L. Crawford, 61
Limits and Relationships of the Lutjanidae and Associated Families, by G. D. Johnson, 77
Linkage and Chromosome Mapping in Man, by B. J. B. Keats, 188
Lippson, A. J., et al., Environmental Atlas of the Potomac Estuary, 483
Lives of Eukaryotic Cells, by L. Thomas, *lead review of* Symbiosis in Cell Evolution, by L. Margulis, 167
Living and Fossil Brachiopod Genera 1775–1979: Lists and Bibliography, by R. A. Doescher, 306
Lloyd, D., et al., The Cell Division Cycle, 456
Lock, M. A., and D. D. Williams (eds.), Perspectives in Running Water Ecology, 484
Logistic curve and the history of population ecology, by S. Kingsland, *article*, 29
Lonberg-Holm, K., and L. Philipson (eds.), Virus Receptors, Part 2 (Animal Viruses), 326
Loneragan, J. F., et al. (eds.), Copper in Soils and Plants, 471
Long, J. L., Introduced Birds of the World, 206
Longhurst, A. R., (ed.), Analysis of Marine Ecosystems, 78
Lubinsky, I., Marine Bivalve Molluscs of the Canadian Central and Eastern Arctic: Faunal Composition and Zoogeography, 77
Lucy: The Beginnings of Humankind, by D. C. Johanson and M. A. Edey, 224
Lymphokines, ed. by E. Pick, Vol. 2, 63; Vol. 3 (Lymphokines in Macrophage Activation), Vol. 4, 306
Lymphokines: Biochemistry and Biological Activity, ed. by J. W. Hadden and W. E. Stewart II, 230

M

Mace, M. E., et al. (eds.), Fungal Wilt Diseases of Plants, 196
Macknight, A. D. C., and J. P. Leader (eds.), Epithelial Ion and Water Transport, 182
MacLeod, R. M., and U. Scapagnini (eds.), Central and Peripheral Regulation of Prolactin Function, 74
Magee, D. W., Freshwater Wetlands: A Guide to Common Indicator Plants of the Northeast, 194
Mahunka, S., (ed.), The Fauna of the Hortobágy National Park, Vol. 1, 476
Malloch, D., Moulds: Their Isolation, Cultivation and Identification, 191
Mammalian Population Genetics, ed. by M. H. Smith and J. Joule, 66
Mammalian Radiations: An Analysis of Trends in Evolution, Adaptation, and Behavior, by J. F. Eisenberg, 479
Mammals and birds, alloparental care and adoption in, by M. L. Riedman, *article*, 405
Mammals of the Southwest, by E. L. Cockrum, 480
Man and Fisheries on an Amazon Frontier, by M. Goulding, 204
Man, Fishes, and the Amazon, by N. J. H. Smith, 204
Management of Insect Pests with Semiochemicals: Concepts and Practice, ed. by E. R. Mitchell, 213
Manaker, G. H., Interior Plantscapes: Installation, Maintenance, and Management, 199
Mani, M. S., and L. E. Giddings, Ecology of Highlands, 86
Manitto, P., Biosynthesis of Natural Products, 312
Mansfield, J. M. (ed.), Parasitic Diseases, Vol.

1 (The Immunology), 499
Manual of Macrophage Methodology: Collection, Characterization, and Function, ed. by H. B. Herscowitz et al., 93
Manual of Methods for General Bacteriology, ed. by P. Gerhardt et al., 325
Maramorosch, K., and K. F. Harris (eds.), Plant Diseases and Vectors: Ecology and Epidemiology, 330
Marchalonis, J. J., et al. (eds.), Cancer Biology Reviews, Vol. 2, Vol. 3, 508
Marcus, A. (ed.), Proteins and Nucleic Acids, 177
Marcus, L. C., Veterinary Biology and Medicine of Captive Amphibians and Reptiles, 206
Margulis, L., Symbiosis in Cell Evolution, *lead review*, 167
Marine Bivalve Molluscs of the Candian Central and Eastern Arctic: Faunal Composition and Zoogeography, by I. Lubinsky, 77
Marine Environmental Pollution, 1: Hydrocarbons, ed. by R. A. Geyer, 82
Marine Invertebrates: Laboratory Animal Management, by Committee on Marine Invertebrates, 342
Marine Natural Products: Chemical and Biological Perspectives, ed. by P. J. Scheuer, Vol. 4, 347
Maritime Adaptations, ed. by A. Spoehr, 366
Mark, J., Four Anthropologists: An American Science in Its Early Years, 55
Marmasse, C., Microscopes and Their Uses, 97
Marshall, P. T., and G. M. Hughes, Physiology of Mammals and Other Vertebrates, 2nd ed., 73
Martin, W. C., and C. R. Hutchins, A Flora of New Mexico, Vol. 1, Vol. 2, 334
Masters, R. D., Is Sociobiology Reactionary? The Political Implications of Inclusive-Fitness Theory, *article*, 275
Maternal Effects in Development, ed. by D. R. Newth and M. Balls, 69
Mathematical Modelling and Computers in Endocrinology, by J. E. A. McIntosh and R. P. McIntosh, 98
Mathematical Theory of Quantitative Genetics, by M. G. Bulmer, 68
Mathematics and Plant Physiology, ed. by D. A. Rose and D. A. Charles-Edwards, 472
Mathematics and Statistics for the Bio-Sciences, by G. Eason et al., 99
Mathematics of Photosynthesis and Productivity, by D. A. Charles-Edwards, 473
Matter, Life and Generation, by S. A. Roe, 174
Matthews, R. E. F., Plant Virology, 2nd ed., 466
Mayr, E., The Growth of Biological Thought, *lead review*, 437
McArdle, J. E., Functional Morphology of the Hip and Thigh of the Lorisiformes, 338
McCoy, D., Roadside Trees and Shrubs of Oklahoma, 72
McDonald, J. N., North American Bison: Their Classification and Evolution, 319
McIntosh, J. E. A., and R. P. McIntosh, Mathematical Modelling and Computers in Endocrinology, 98
McKelvey, J. J., Jr., et al. (eds.), Vectors of Disease Agents: Interactions with Plants, Animals, and Man, 210
McKinnell, R. G., et al. (eds.), Differentiation and Neoplasia, 70
McLaren, I. A., The Birds of Sable Island, Nova Scotia, 206
McLusky, D. S., The Estuarine Ecosystem, 345
McMinn, H. E., and E. Maino, An Illustrated Manual of Pacific Coast Trees, 2nd ed., 333
Mechanical Properties of Biological Materials, ed. by J. F. V. Vincent and J. D. Currey, 99
Mechanisms of Immunity to Virus-Induced Tumors, ed. by J. W. Blasecki, 354
Medical Physics, by A. C. Damask, Vol. 2 (External Senses), 233
Meliaceae, by T. D. Pennington et al., 474
Membrane Spectroscopy, ed. by E. Grell, 309
Merrell, D. J., Ecological Genetics, 461
Metabolism and Molecular Activities of Cytokinins, ed. by J. Guern and C. Péaud-Lenoël, 309
Metal Ions in Biological Systems, ed. by H. Sigel and A. Sigel, Vol. 13 (Copper Proteins), 311
Metals in Biochemistry, by P. M. Harrison and R. J. Hoare, 60
Methods in Enzymology, ed. by S. P. Colowick and N. O. Kaplan, Vol. 77 (Detoxication and Drug Metabolism: Conjugation and Related Systems), 308; Vol. 78 (Interferons, Part A), Vol. 79 (Interferons, Part B), Vol. 82 (Structural and Contractile Proteins, Part A: Extracellular Matrix), 455
Methods in Neurobiology, ed. by R. Lahue, Vol. 1, Vol. 2, 490
Methods (numerical) for inferring evolutionary trees, by J. Felsenstein, *article*, 379
Mettlin, C., and G. P. Murphy (eds.), Cancer Among Black Populations, 507
Meyer, P., Evolution und Gewalt: Ansätze zu einer Bio-soziologischen Synthese, 185

Microbiology, *book reviews*, 191, 324, 465
Microbiology, by C. F. Norton, 324
Microcirculation, ed. by B. M. Altura, Vol. 1, No. 1 (1981), 233
Microscopes and Their Uses, by C. Marmasse, 97
Milk and Honey, by H. R. Hepburn and G. Mitchell, 218
Mismeasure of Man, by S. J. Gould, 359
Mitchell, E. R. (ed.), Management of Insect Pests with Semiochemicals: Concepts and Practice, 213
Mitchell, G., Human Sex Differences: A Primatologist's Perspective, 227
Mitochondria, Chloroplasts and Bacterial Membranes, by J. N. Prebble, 459
Mitogenic Lymphocyte Transformation, by D. A. Hume and M. J. Weidemann, 315
Model (logistic curve and the history of population ecology), by S. Kingsland, *article*, 29
Modern Ethology, by S. A. Barnett, 90
Modified Nucleosides of Transfer RNA: A Bibliography of Biochemical and Biophysical Studies from 1970 to 1979, by P. F. Agris, 62
Mohlenbrock, R. H., Flowering Plants: Magnolias to Pitcher Plants, 200
Molecular and Cellular Aspects of Microbial Evolution, ed. by M. J. Carlile et al., 325
Molecular Biology, *book reviews*, 60, 177, 306, 451
Molecular Electro-Optics, ed. by S. Krause, 236
Molecular Enzymology, by C. W. Wharton and R. Eisenthal, 455
Molecular Gods: How Molecules Determine Our Behavior, by P. B. Appelwhite, 487
Molecular Processes in Vision, ed. by E. W. Abrahamson and S. E. Ostroy, 454
Molecular Theory of Radiation Biology, by K. H. Chadwick and H. P. Leenhouts, 185
Monograph of the Genus *Myrceugenia* (Myrtaceae), by L. R. Landrum, 474
Monographs of Marine Mollusca, ed. by R. T. Abbott, No. 2, 201
Moore, T. C., Research Experiences in Plant Physiology: A Laboratory Manual, 2nd ed., 71
Moore-Ede, M. C., et al., The Clocks That Time Us, 511
Moran, E. F. Developing the Amazon, 79
Mordue, W., et al., Insect Physiology, 202
Morphogenesis and Pattern Formation, ed. by T. G. Connelly et al., 190
Morris, D. R., and L. J. Marton (eds.), Polyamines in Biology and Medicine, 232
Morris, I. (ed.), The Physiological Ecology of Phytoplankton, 84
Morton, J. F., Atlas of Medicinal Plants of Middle America: Bahamas to Yucatan, 93
Mosses of Eastern North America, by H. A. Crum and L. E. Anderson, Vol. 1, Vol. 2, 195
Moulds: Their Isolation, Cultivation and Identification, by D. Malloch, 191
Mouse in Biomedical Research, ed. by H. L. Foster et al., Vol. 1 (History, Genetics, and Wild Mice), 356
Moyer, K. E., and M. Crabtree, Bibliography of Aggressive Behavior: A Reader's Guide to the Research Literature, Vol. 2, 89
Mugaas, J. N., and J. R. King, Annual Variation of Daily Energy Expenditure by the Black-Billed Magpie: A Study of Thermal and Behavioral Energetics, 339
Mule and Black-Tailed Deer of North America, ed. by O. C. Wallmo, 338
Müller, A. H., Lehrbuch der Palãozoologie, Vol. 2 (Invertebraten), Part 2 (Mollusca 2–Arthropoda 1), 3rd ed., 177
Mullins, L. J., Ion Transport in Heart, 501
—— (compiler), Annual Reviews Reprints: Cell Membranes, 1978–1980, 64
Mummies, Diseases, and Ancient Cultures, ed. by A. Cockburn and E. Cockburn, 100
Munz, L. T., and N. G. Slauson, Index to Illustrations of Living Things Outside North America: Where to Find Pictures of Flora and Fauna, 368
Murdock, G. P., Atlas of World Cultures, 95
Murphy, E. A., Skepsis, Dogma, and Belief: Uses and Abuses in Medicine, 56
Murphy, G. P., et al. (eds.), The Prostatic Cell: Structure and Function, Part A (Morphologic, Secretory, and Biochemical Aspects), Part B (Prolactin, Carcinogenesis, and Clinical Aspects), 498
Muscle Receptors and Movement, ed. by A. Taylor and A. Prochazka, 341
Mystery of Migration, ed. by R. Baker, 59

N

Nader, R., et al. (eds), Who's Poisoning America?, 226
Natural Collection, by S. C. Wilson and K. C. Hayden, 305
Natural History of the Gorilla, by A. F. Dixson, 480
Natural Selection and Social Behavior: Recent

Research and New Theory, ed. by R. D. Alexander and D. W. Tinkle, 183
Nature Discoveries with a Hand Lens, by R. Headstrom, 305
Nelson, G., and N. Platnick, Systematics and Biogeography: Cladistics and Vicariance, 320
Nelson, G., and D. E. Rosen (eds.), Vicariance Biogeography: A Critique, 320
Nelson, P. G., and M. Lieberman (eds.), Excitable Cells in Tissue Culture, 314
Neoplastic and Normal Cells in Culture, by J. M. Vasiliev and I. M. Gelfand, 182
Neotropical *Heliconia* Insect Communities, by R. P. Seifert, *article*, 1
Nerve and Muscle Excitation, by D. Junge, 2nd ed., 87
Neural Sciences & Behavior, *book reviews*, 86, 221, 348, 487
Neuroendocrine Regulation and Altered Behaviour, ed. by P. D. Hrdina and R. L. Singhal, 488
Neuroethology: An Introduction, by D. M. Guthrie, 223
Neurones Without Impulses: Their Significance for Vertebrate and Invertebrate Nervous Systems, ed. by A. Roberts and B. M. H. Bush, 88
Neurophysiology, by P. P. Newman, 222
New World Species of *Cynanchum* L. Subgenus *Mellichampia* (A. Gray ex S. Wats.) Woods. (Asclepiadaceae), by E. Sundell, 472
Newman, P. P., Neurophysiology, 222
Newth, D. R., and M. Balls (eds.), Maternal Effects in Development, 69
Newton, M., and F. B. Knight, Handbook of Weed and Insect Control Chemicals for Forest Resource Managers, 214
Nievergelt, B., Ibexes in an African Environment, 486
Nijhout, H. F., and D. E. Wheeler, Juvenile Hormone and the Physiological Basis of Insect Polymorphisms, *article*, 109
Noakes, D. L. G., and J. A. Ward (eds.), Ecology and Ethology of Fishes, 203
Nonlinear Phenomena in Physics and Biology, ed. by R. H. Enns et al., 512
Nordlund, D. A., et al. (eds.), Semiochemicals: Their Role in Pest Control, 82
North American Bison: Their Classification and Evolution, by J. N. McDonald, 319
North American Grasshoppers, by D. Otte, Vol. 1 (Acrididae—Gomphocerinae and Acridinae), 342
Norton, C. F., Microbiology, 324
Nuclear-Cytoplasmic Interactions in the Cell Cycle, ed. by G. L. Whitson, 181
Nuclear particles, Part A, Part B, ed. by H. Busch, 458
Nuclear Power, Man and the Environment, by R. J. Pentreath, 215
Nuclear Transplantation, ed. by J. F. Danielli and M. A. Di Berardino, 182
Nucleic Acid Sequences Handbook, by C. Gautier et al., Vol. 2, 454
Nucleic Acids and Proteins, ed. by S. Zhao-wen, 178
Nucleotide Analogs: Synthesis and Biological Function, by K. H. Scheit, 60
Numerical Methods for Inferring Evolutionary Trees, by J. Felsenstein, *article*, 379

O

Ocean Dumping of Industrial Wastes, ed. by B. H. Ketchum et al., 218
Ocular Size and Shape Regulation During Development, ed. by S. R. Hilfer and J. B. Sheffield, 464
Oksche, A., and P. Pévet (eds.), The Pineal Organ: Photobiology, Biochronometry, Endocrinology, 479
Okubo, A., Diffusion and Ecological Problems: Mathematical Models, 234
On Becoming Human, by N. M. Tanner, 364
On the Evolution of Human Behavior, by P. C. Reynolds, 365
100 Families of Flowering Plants, by M. Hickey and C. King, 199
Ontogeny and Phylogeny of Hormone Receptors, by G. Csaba, 307
Opiate Addiction: The Good Old Days, by S. Cohen, *lead review of* Dark Paradise: Opiate Addiction in America before 1940, by D. T. Courtwright, 444
Oppenheimer, S. B., Cancer: A Biological and Clinical Introduction, 507
Organization of the Cerebral Cortex, ed. by F. O. Schmitt et al., 348
Origins and Evolution of Eukaryotic Intracellular Organelles, ed. by J. F. Fredrick, 62
Origins of Life and Evolution, ed. by H. O. Halvorson and K. E. Van Holde, 69
Osmond, C. B., et al., Physiological Processes in Plant Ecology: Toward a Synthesis with *Atriplex*, 192

Ospovat, D., The Development of Darwin's Theory, 447
Otte, D., The North American Grasshoppers, Vol. 1 (Acrididae—Gomphocerinae and Acridinae), 342
Owen, C. A., Jr., Copper Deficiency and Toxicity—Acquired and Inherited—in Plants, Animals and Man, 356
Oxford Reviews of Reproductive Biology, ed. by C. A. Finn, Vol. 3, 465

P

Pacific Coast Inshore Fishes, by D. W. Gotshall, 2nd rev. ed., 204
Paige, K. E., and J. M. Paige, The Politics of Reproductive Ritual, 361
Paleontology & Earth Sciences, *book reviews*, 176, 305, 450
Paleontology and Paleoenvironments, ed. by B. J. Skinner, 305
Palmer, T., Understanding Enzymes, 455
Panopoulos, N. J. (ed.), Genetic Engineering in the Plant Sciences, 467
Parasitic Diseases, ed. by J. M. Mansfield, Vol. 1 (The Immunology), 499
Parasitological Topics, ed. by E. U. Canning, 357
Parenti, L. R., A Phylogenetic and Biogeographic Analysis of Cyprinodontiform Fishes (Teleostei, Atherinomorphia), 204
Pathophysiology of the Reticuloendothelial System, ed. by B. M. Altura and T. M. Saba, 498
Patterns of Vertebrate Biology, by E. W. Jameson, Jr., 336
Patterson, F., and E. Linden, The Education of Koko, 338
Patterson, M. M., and R. P. Kesner (eds.), Electrical Stimulation Research Techniques, 349
Payne, W. J., Denitrification, 484
Pediatric Endocrinology, ed. by R. Collu et al., 505
Pelczar, M. J., Jr., and E. C. S. Chan, Elements of Microbiology, 191
Pellegrino, E. D., and D. C. Thomasma, A Philosophical Basis of Medical Practice: Toward a Philosophy and Ethic of the Healing Professions, 494
Penguin Dictionary of Microprocessors, by A. Chandor, 367
Pennington, T. D., Meliaceae, 474
Pentreath, R. J., Nuclear Power, Man and the Environment, 215
Peptides: Analysis, Synthesis, Biology, ed. by E. Gross and J. Meienhofer, Vol. 3 (Protection of Functional Groups in Peptide Synthesis), 178
Peroxisomes and Related Particles in Animal Tissues, by P. Böck et al., 314
Perspectives in Ethology, ed. by P. P. G. Bateson and P. H. Klopfer, Vol. 4 (Advantages of Diversity), 90
Perspectives in Running Water Ecology, ed. by M. A. Lock and D. D. Williams, 484
Persson, T. (ed.), Structure and Function of Northern Coniferous Forests: An Ecosystem Study, 217
Petersen, R. H., *Ramaria* Subgenus *Echinoramaria*, 195
Peto, R., and M. Schneiderman (eds.), Quantification of Occupational Cancer, 507
Pharmacology, by M. C. Gerald, 2nd ed., 356
Philosopical Basis of Medical Practice: Toward a Philosophy and Ethic of the Healing Professions, by E. D. Pellegrino and D. C. Thomasma, 494
Photosynthesis, ed. by M. D. Hatch and N. K. Boardman, 180
Photosynthesis Bibliography, ed. by Z. Šesták and J. Čatský, Vol. 8 [1977 (References No. 28496–32554/AAS-ZUT)], Vol. 9 [1978 (References No. 32555–36587/AAR-ZVA)], 329
Phylogenetic and Biogeographic Analysis of Cyprinodontiform Fishes (Teleostei, Atherinomorphia), by L. R. Parenti, 204
Physical Principles of Pesticide Behaviour, by G. S. Hartley and I. J. Graham-Bryce, Vol. 1, Vol. 2, 484
Physiological basis of insect polymorphisms, juvenile hormone and, by H. F. Nijhout and D. E. Wheeler, *article*, 109
Physiological Ecology of Phytoplankton, ed. by I. Morris, 84
Physiological Processes in Plant Ecology: Toward a Synthesis with *Atriplex*, by C. B. Osmond et al., 192
Physiology of Mammals and Other Vertebrates, by P. T. Marshall and G. M. Hughes, 2nd ed., 73
Physiology of the Gastrointestinal Tract, ed. by L. R. Johnson, Vol. 1, Vol. 2, 230
Physiology: Past, Present and Future, ed. by D. J. Anderson, 89
Physiopathology of Endocrine Diseases and Mech-

anisms of Hormone Action, ed. by R. J. Soto et al., 501
Piaget, J., Adaptation and Intelligence: Organic Selection and Phenocopy (transl. by S. Eames), 65
Pick, E. (ed.), Lymphokines, Vol. 2, 63; Vol. 3 (Lymphokines in Macrophage Activation), Vol. 4, 306
Piltdown Forgery, by J. S. Weiner, 174
Pineal Organ: Photobiology, Biochronometry, Endocrinology, ed. by A. Oksche and P. Pévet, 479
Plant Disease Control: Resistance and Susceptibility, ed. by R. C. Staples and G. H. Toenniessen, 72
Plant Diseases and Vectors: Ecology and Epidemiology, ed. by K. Maramorosch and K. F. Harris, 330
Plant Parasitic Nematodes, ed. by B. M. Zuckerman and R. A. Rohde, Vol. 3, 470
Plant Science: Growth, Development, and Utilization of Cultivated Plants, by H. T. Hartmann et al., 328
Plant Speciation, by V. Grant, 2nd ed., 464
Plant Taxonomy and Biosystematics, by C. A. Stace, 71
Plant Tissue Culture: Methods and Applications in Agriculture, ed. by T. A. Thorpe, 198
Plant Virology, by R. E. F. Matthews, 2nd ed., 466
Platelets in Biology and Pathology—2, ed. by J. L. Gordon, 62
Plovers, Sandpipers, and Snipes of the World, by P. A. Johnsgard, 338
Poirier, F. E., Fossil Evidence: The Human Evolutionary Journey, 3rd ed., 365
Poison Tree, ed. and transl. by E. M. Beekman, 474
Political implications of inclusive-fitness theory, by R. D. Masters, *article*, 275
Politics of Reproductive Ritual, by K. E. Paige and J. M. Paige, 361
Polyamines in Biology and Medicine, ed. by D. R. Morris and L. J. Marton, 232
Polymorphisms (insect), juvenile hormone and, by H. F. Nijhout and D. E. Wheeler, *article*, 109
Population ecology, history of, by S. Kingsland, *article*, 29
Population Ecology of Cycles in Small Mammals: Mathematical Theory and Biological Fact, by J. P. Finerty, 344
Pospíšilová, J., and J. Solárová (eds.), Water-in-Plants Bibliography, Vol. 6 [(1980): References No. 6606-8128/AAS-ZOB], 472
Possible and the Actual, by F. Jacob, 448
Posttraumatic Peripheral Nerve Regeneration: Experimental Basis and Clinical Implications, ed. by A. Gorio et al., 489
Practical Invertebrate Zoology, compiled and ed. by R. P. Dales, 2nd ed., 75
Prebble, J. N., Mitochondria, Chloroplasts and Bacterial Membranes, 459
Predation and Freshwater Communities, by T. M. Zaret, 220
Predictive Value of Short-Term Screening Tests in Carcinogenicity Evaluation, ed. by G. M. Williams et al., 94
Predominantly Holocarpic and Eucarpic Simple Biflagellate Phycomycetes, by J. S. Karling, 2nd rev. ed., 469
Prescott, D. M., and L. Goldstein (eds.), Gene Expression: Translation and the Behavior of Proteins, 64
Prescott, G. W., et al., A Synopsis of North American Desmids, Part 2 (Desmidiaceae: Placodermae), Sect. 3, 194
Price, J. H., et al. (eds.), The Shore Environment, Vol. 1 (Methods), Vol. 2 (Ecosystems), 77
Primer of Population Genetics, by D. L. Hartl, 187
Principles of Benthic Marine Paleoecology, by A. J. Boucot, 176
Principles of Human Physiology, by G. J. Tortora et al., 478
Progress in Botany: Morphology, Physiology, Genetics, Taxonomy, Geobotany, ed. by H. Ellenberg et al., Vol. 43, 468
Prostatic Cell: Structure and Function, ed. by G. P. Murphy et al., Part A (Morphologic, Secretory, and Biochemical Aspects), Part B (Prolactin, Carcinogenesis, and Clinical Aspects), 498
Proteins and Nucleic Acids, ed. by A. Marcus, 177
Proteins of the Nervous System, ed. by R. A. Bradshaw and D. M. Schneider, 2nd ed., 87
Pruniéras, M. (ed.), Epidermal Keratinocyte Differentiation and Fibrillogenesis, 64
Psychoneuroimmunology, ed. by R. Ader, 353
Purinergic Receptors, ed. by G. Burnstock, 309

Q

Quantification of Occupational Cancer, ed. by R. Peto and M. Schneiderman, 507

Quantitative Genetics in Maize Breeding, by A. R. Hallauer and J. B. Miranda, Fo., 186
Question of Animal Awareness, by D. R. Griffin, rev. and enl. ed., 221

R

Radiation Protection: Bone and Bone Seeking Radionuclides—Physiology, Dosimetry, and Effects, ed. by V. Volf, 355
Radiation Protection: Ion Chambers for Neutron Dosimetry, ed. by J. J. Broerse, 93
Radiation Regime and Architecture of Plant Stands, by J. Ross, 330
Radioactive Decay Data Tables, by D. C. Kocher, 355
Ralph, C. J., and J. M. Scott (eds.), Estimating Numbers of Terrestrial Birds, 477
Ramaria Subgenus *Echinoramaria*, by R. H. Petersen, 195
Randall, L. L., and L. Philipson (eds.), Virus Receptors, Part 1 (Bacterial Viruses), 326
Rank (dominance), copulatory behavior and differential reproduction, by D. A. Dewsbury, *article*, 135
Rankin, J. C., and J. Davenport, Animal Osmoregulation, 341
Ransom, R., Computers and Embryos: Models in Developmental Biology, 190
Rasmussen, H., Calcium and cAMP as Synarchic Messengers, 453
Ratcliffe, J. M., Lead in Man and the Environment, 501
Raven, P. H., et al., Biology of Plants, 3rd ed., 328
Reckoning with the Beast: Animals, Pain, and Humanity in the Victorian Mind, by J. Turner, 55
Red Cell: Fifth Ann Arbor Conference, ed. by G. J. Brewer, 497
Reed, S., Counseling in Medical Genetics, 3rd ed., 94
Refractory Model: The Logistic Curve and the History of Population Ecology, by S. Kingsland, *article*, 29
Regulation, hormonal and genetic, of vitellogenesis in Drosophila, by M. Bownes, *article*, 247
Reproduction & Development, *book reviews*, 69, 189, 321, 464
Reproduction (differential), dominance rank, copulatory behavior and, by D. A. Dewsbury, *article*, 135
Reproductive Pasts—Reproductive Futures, by J. R. Sorenson et al., 491
Research: A Practical Guide to Finding Information, by P. Fenner and M. C. Armstrong, 367
Research Experiences in Plant Physiology: A Laboratory Manual, by T. C. Moore, 2nd ed., 71
Revised Handbook to the Flora of Ceylon, ed. by M. D. Dassanayake, Vol. 2, 200; Vol. 3, 474
Revision der Gattung *Pulicaria* (Compositae-Inuleae) für Afrika, Makaronesien und Arabien, by E. Gamal-Eldin, 199
Reynolds, D. R. (ed.), Ascomycete Systematics: The Luttrellian Concept, 191
Reynolds, P. C., On the Evolution of Human Behavior, 365
Richardson, D. H. S., The Biology of Mosses, 470
Richardson, J., Wild Edible Plants of New England: A Field Guide (Including Poisonous Plants Often Encountered), 473
Rider, C. C., and C. B. Taylor, Isoenzymes, 63
Ridgway, S. H., and R. J. Harrison (eds.), Handbook of Marine Mammals, Vol. 1 (The Walrus, Sea Lions, Fur Seals and Sea Otter), Vol. 2 (Seals), 480
Riedman, M. L., The Evolution of Alloparental Care and Adoption in Mammals and Birds, *article*, 405
Rifkin, J., Entropy: A New World View, 100
Rights and Responsibilities in Modern Medicine, ed. by M. D. Basson, 91
River Vegetation: Its Identification, Assessment and Management, by S. M. Haslam and P. A. Wolseley, 345
Roadside Trees and Shrubs of Oklahoma, by D. McCoy, 72
Roberts, A., and B. M. H. Bush (eds.), Neurones without Impulses: Their Significance for Vertebrate and Invertebrate Nervous Systems, 88
Roberts, E. B., et al. (eds.), Biomedical Innovation, 495
Rodríguez, E. M., and Tj. B. van Wimersma Greidanus (eds.), Cerebrospinal Fluid (CSF) and Peptide Hormones, 490
Roe, D. A., (ed.), Drug-Nutrient Interactions, Vol. 1, No. 1 (1981), 503
Roe, K. E., and R. G. Frederick, Dictionary of Theoretical Concepts in Biology, 58
Roe, S. A., Matter, Life, and Generation, 174
Rogers, R. W., The Genera of Australian Lichens

(Lichenized Fungi), 332
Rohlf, F. J., and R. R. Sokal, Statistical Tables, 2nd ed., 511
Rollin, B. E., Animal Rights and Human Morality, 481
Romanes, G. J. (ed.), Cunningham's Textbook of Anatomy, 12th ed., 92
Romans, R. C. (ed.), Geobotany II, 329
Romoser, W. S., The Science of Entomology, 2nd ed., 75
Roots of Human Behavior, by M. A. Hofer, 96
Rose, D. A., and D. A. Charles-Edwards (eds.), Mathematics and Plant Physiology, 472
Ross, J., The Radiation Regime and Architecture of Plant Stands, 330
Rotenberg, M. (ed.), Biomathematics and Cell Kinetics, 457
Round, F. E., The Ecology of Algae, 485
Ruddon, R. W., Cancer Biology, 507
Ruminant Immune System, ed. by J. E. Butler, 341
Ruse, M., Is Science Sexist? (and Other Problems in the Biomedical Sciences), 304
Rzóska, J., Euphrates and Tigris: Mesopotamian Ecology and Destiny, 81

S

Safai, B., and R. A. Good (ed.) Immunodermatology, 234
Said, S. I. (ed.), Vasoactive Intestinal Peptide, 311
Sanderson, J. H., and C. E. Phillips, An Atlas of Laboratory Animal Haematology, 498
Sarnat, H. B., and M. G. Netsky, Evolution of the Nervous System, 2nd ed., 222
Sato, V. L., and M. L. Gefter (compilers), Cellular Immunology: Selected Readings and Critical Commentary, 496
Scattering Techniques Applied to Supramolecular and Nonequilibrium Systems, ed. by S.-H. Chen et al., 512
Scheit, K. H., Nucleotide Analogs: Synthesis and Biological Function, 60
Scheuer, P. J. (ed.), Marine Natural Products: Chemical and Biological Perspectives, Vol. 4, 347
Schmidt, G. D., and L. S. Roberts, Foundations of Parasitology, 2nd ed., 211
Schmitt, F. O., et al. (eds.), The Organization of the Cerebral Cortex, 348
Schulman, J. D., and J. L. Simpson (eds.), Genetic Diseases in Pregnancy: Maternal Effects and Fetal Outcome, 491
Schwartz, L. M., and M. M. Azar (eds.), Advanced Cell Biology, 313
Schwarz, J., Histoplasmosis, 231
Schweiger, H. G. (ed.), International Cell Biology 1980–1981, 62
Science, Ideology, and World View, by J. C. Greene, 171
Science in the Making, by J. Woodcock, *commentary*, 161
Science of Entomology, by W. S. Romoser, 2nd ed., 75
Science Without Numbers: A Defence of Nominalism, by H. H. Field, 54
Scientific American (ed.), Genetics, 64
Scorpiones, by G. Levy and P. Amitai, 76
Sea Guide to Whales of the World, by L. Watson, 337
Search for Structure, by C. S. Smith, 173
Seaweeds and Their Uses, by V. J. Chapman, 3rd ed., 195
Secondary Plant Metabolism, by M. L. Vickery and B. Vickery, 196
Seedlings of Dicotyledons: Structure, Development, Types, by E. F. de Vogel, 71
Segal, S. J. (ed.), Chorionic Gonadotropin, 70
Seifert, R. P., Neotropical *Heliconia* Insect Communities, *article*, 1
Semiochemicals: Their Role in Pest Control, ed. by D. A. Nordlund et al., 82
Sedentariate and Archiannelid Polychaetes of British Columbia and Washington, by K. D. Hobson and K. Banse, 201
Sequencing of Proteins and Peptides, by G. Allen, 310
Serotonin Neurotransmission and Behavior, ed. by B. L. Jacobs and A. Gelperin, 488
Šesták, Z., and J. Čatský (eds.), Photosynthesis Bibliography, Vol. 8 [1977 (References No. 28496–32554/AAS-ZUT)], Vol. 9 [1978 (References No. 32555–36587/AAR-ZVA)], 329
Sexual Preference: Its Development in Men and Women, by A. P. Bell et al., 362
Sexual Preference: Its Development in Men and Women (Statistical Appendix), by A. P. Bell et al., 362
Shaping of Cambridge Botany, by S. M. Walters, 172
Shore Environment, ed. by J. H. Price et al., Vol. 1 (Methods), Vol. 2 (Ecosystems), 77
Shrader-Frechette, K. S., Environmental Ethics, 343

Sigel, H., and A. Sigel (eds.), Metal Ions in Biological Systems, Vol. 13 (Copper Proteins), 311
Simpson, G. G., Autobiology, *lead review of* The Growth of Biological Thought, by E. Mayr, 437
Simpson, G. M., Water Stress on Plants, 472
Sims, R. W. (ed.), Animal Identification: A Reference Guide, Vol. 1 (Marine and Brackish Water Animals), Vol. 2 [Land and Freshwater Animals (Not Insects)], 73
Skepsis, Dogma, and Belief: Uses and Abuses in Medicine, by E. A. Murphy, 56
Skinner, B. J. (ed.), Paleontology and Paleoenvironments, 305
—— (ed.), Use and Misuse of Earth's Surface, 344
Skoryna, S. C. (ed.), Handbook of Stable Strontium, 453
Skulachev, V. P. (ed.), Biology Reviews, Vol. 1 (Physico-Chemical Aspects), 99
Smith, A. H., et al., How to Know the Non-Gilled Mushrooms, 2nd ed., 192
Smith, C. S., A Search for Structure, 173
Smith, L. L., Cholesterol Autoxidation, 307
Smith, M. H., and J. Joule (eds.), Mammalian Population Genetics, 66
Smith, N. J. H., Man, Fishes, and the Amazon, 204
Smithsonian Institution, Fire of Life, 176
Snouters, by H. Stümpke, 176
Social Biology of Ants, by K. Dumpert (transl. by C. Johnson), 202
Social Organization of Tigers (*Panthera tigris*) in Royal Chitawan National Park, Nepal, by M. E. Sunquist, 349
Sociobiology, is it reactionary?, by R. D. Masters, *article*, 275
Sohal, R. S. (ed.), Age Pigments, 357
Sokal, R. R., and F. J. Rohlf, Biometry, 510
Solounia, N., The Turolian Fauna from the Island of Samos, Greece, with Special Emphasis on the Hyaenids and the Bovids, 202
Sonesson, M. (ed.), Ecology of a Subarctic Mire, 80
Sorenson, J. R., et al., Reproductive Pasts—Reproductive Futures, 491
Soto, R. J., et al. (eds.), Physiopathology of Endocrine Diseases and Mechanisms of Hormone Action, 501
Spain, J. D., Basic Microcomputer Models in Biology, 366
Spanish Scientists in the New World: The Eighteenth-Century Expeditions, by I. H. W. Engstrand, 171
Spatial Processes: Models & Applications, by A. D. Cliff and J. K. Ord, 236
Speech and Language: Advances in Basic Research and Practice, ed. by N. J. Lass, Vol. 5, 493
Sperlinger, D. (ed.), Animals in Research, 481
Spiro, T. G. (ed.), Copper Proteins, 453
Spoehr, A. (ed.), Maritime Adaptations, 366
Springer, S. P., and G. Deutsch, Left Brain, Right Brain, 487
Squirrels of Canada, by S. E. Woods, Jr., 74
Stace, C. A., Plant Taxonomy and Biosystematics, 71
Staples, R. C., and G. H. Toenniessen (eds.), Plant Disease Control: Resistance and Susceptibility, 72
Statistical Methods in Cancer Research, by N. E. Breslow and N. E. Day, Vol. 1 (The Analysis of Case-Control Studies), 94
Statistical Tables, by F. J. Rohlf and R. R. Sokal, 2nd ed., 511
Steinberg, A. G., and C. E. Cook, The Distribution of the Human Immunoglobulin Allotypes, 67
Steinman, H., and L. Zombori, An Atlas of Insect Morphology, 76
Steroids: Keys to Life, by R. F. Witzmann, 306
Stewart, A. D., and D. M. Hunt, The Genetic Basis of Development, 316
Stewart, P. A., How to Understand Acid-Base, 179
Stipes, R. J., and R. J. Campana, Compendium of Elm Diseases, 198
Stott, P., Historical Plant Geography: An Introduction, 193
Structure and Function of Northern Coniferous Forests: An Ecosystem Study, ed. by T. Persson, 217
Structure and Function of Plant Roots, ed. by R. Brouwer et al., 471
Struktur und Funktion mitochondrialer DNA bei Pilzen, by H.-U. Kück, 452
Studies in Developmental Neurobiology: Essays in Honor of Viktor Hamburger, ed. by W. M. Cowan, 323
Studies in History of Biology 5, ed. by W. Coleman and C. Limoges, 175
Stümpke, H., The Snouters, 176
Sturkie, P. D. (ed.), Basic Physiology, 210
Succession, ed. by E. van der Maarel, 70
Sundell, E., The New World Species of *Cynan-*

chum L. Subgenus *Mellichampia* (A. Gray ex S. Wats.) Woods. (Asclepiadaceae), 472
Sunquist, M. E., The Social Organization of Tigers (*Panthera tigris*) in Royal Chitawan National Park, Nepal, 349
Symbiosis in Cell Evolution, by L. Margulis, *lead review*, 167
Symons, D., Another Woman That Never Existed, *lead review of* The Woman That Never Evolved, by S. B. Hrdy, 297
Synopsis of North American Desmids, by G. W. Prescott et al., Part 2 (Desmidiaceae: Placodermae), Sect. 3, 194
Systematics and Biogeography: Cladistics and Vicariance, by G. Nelson and N. Platnick, 320

T

Tanner, J. M., A History of the Study of Human Growth, 360
Tanner, N. M., On Becoming Human, 364
Taylor, A., and A. Prochazka (eds.), Muscle Receptors and Movement, 341
Teaching and Learning about Science and Society, by J. Ziman, 173
Terrestrial Nitrogen Cycles: Processes, Ecosystem Strategies and Management Impacts, ed. by F. E. Clark and T. Rosswall, 214
Theodor, O., Diptera: Asilidae, 76
Theoretical Approach to the Preselection of Carcinogens and Chemical Carcinogenesis, by V. Veljković, 228
Thomas, L., The Lives of Eukaryotic Cells, *lead review of* Symbiosis in Cell Evolution, by L. Margulis, 167
Thompson, F. J., Health Policy and the Bureaucracy: Politics and Implementation, 92
Thorpe, T. A. (ed.), Plant Tissue Culture: Methods and Applications in Agriculture, 198
Threatened Amphibians and Reptiles in Europe, by R. E. Honegger, 476
Thymus Gland, ed. by M. D. Kendall, 505
Toates, F. M., Animal Behaviour—A Systems Approach, 349
Tognoni, G., et al. (eds.), Epidemiological Impact of Psychotropic Drugs, 504
Tortora, G. J., et al., Principles of Human Physiology, 478
Toxicology of the Kidney, ed. by J. B. Hook, 355
Toxicology Reference Data—Wistar Rat: Body and Organ Weights, Biochemical Determinations, Hematology and Urinalysis, Compiled at Janssen Pharmaceutica, by P. J. Lewi and R. P. Marsboom, 93
Transformed Cell, ed. by I. L. Cameron and T. B. Pool, 181
Trees and Shrubs of the Southwestern Deserts, by L. Benson and R. A. Darrow, rev., exp. 3rd ed., 333
Trends in the Biology of Fermentations for Fuels and Chemicals, ed. by A. Hollaender et al., 327
Troubling Problems in Medical Ethics, ed. by M. D. Basson et al., 495
Trudinger, P. A., et al. (eds.), Biogeochemistry of Ancient and Modern Environments, 346
Tundra Ecosystems: A Comparative Analysis, ed. by L. C. Bliss et al., 216
Turner, J., Reckoning with the Beast: Animals, Pain, and Humanity in the Victorian Mind, 55
Turolian Fauna from the Island of Samos, Greece, with Special Emphasis on the Hyaenids and the Bovids, by N. Solounias, 202

U

Ultrastructure of the Oligochaeta, by B. G. J. Jamieson, 475
Understanding Enzymes, by T. Palmer, 455
Understanding Evolution, by E. D. Hanson, 318
Unsöld, A., Evolution kosmischer, biologischer und geistiger Sturkturen, 184
Use and Misuse of Earth's Surface, ed. by B. J. Skinner, 344

V

van der Maarel, E. (ed.), Succession, 70
Van Praag, H. M. (ed.), Handbook of Biological Psychiatry (in Six Parts), Part 4 (Brain Mechanisms and Abnormal Behavior—Chemistry), 504
Vandermeer, J., Elementary Mathematical Ecology, 220
Vascular Flora of Georgia: An Annotated Checklist, by W. H. Duncan and J. T. Kartesz, 200
Vasiliev, J. M., and I. M. Gelfand, Neoplastic and Normal Cells in Culture, 182
Vasoactive Intestinal Peptide, ed. by S. I. Said, 311
Vectors of Disease Agents: Interactions with Plants, Animals, and Man, ed by J. J.

McKelvey, Jr., et al., 210
Veljković, V., A Theoretical Approach to the Preselection of Carcinogens and Chemical Carcinogenesis, 228
Vellutino, F. R., Dyslexia: Theory and Research, 1st paper ed., 492
Vernberg, F. J., and W. B. Vernberg (eds.), Functional Adaptations of Marine Organisms, 73
Vernberg, F. J., et al. (eds.), Biological Monitoring of Marine Pollutants, 347
Veterinary Biology and Medicine of Captive Amphibians and Reptiles, by L. C. Marcus, 206
Vicariance Biogeography: A Critique, ed. by G. Nelson and D. E. Rosen, 320
Vickery, M. L., and B . Vickery, Secondary Plant Metabolism, 196
Vincent, J. F. V., and J. D. Currey (eds.), The Mechanical Properties of Biological Materials, 99
Virus Receptors, Part 1 (Bacterial Viruses), ed. by L. L. Randall and L. Philipson, 326
Virus Receptors, Part 2 (Animal Viruses), ed. by K. Lonberg-Holm and L. Philipson, 326
Vitality and Aging: Implications of the Rectangular Curve, by J. F. Fries and L. M. Crapo, 351
Vitellogenesis in Drosophila, hormonal and genetic regulation of, by M. Bownes, *article*, 247
Vogel, S., Life in Moving Fluids, 368
Voipio, A. (ed.), The Baltic Sea, 451
Volf, V. (ed.), Radiation Protection: Bone and Bone Seeking Radionuclides—Physiology, Dosimetry, and Effects, 355
Volpe, E. P., The Amphibian Embryo in Transplantation Immunity, 189

W

Wallace, B., Basic Population Genetics, 187
Wallace, D. R., Idle Weeds: The Life of a Sandstone Ridge, 59
Wallmo, O. C. (compiler and ed.), Mule and Black-Tailed Deer of North America, 338
Walters, S. M., The Shaping of Cambridge Botany, 172
Water Environment: Algal Toxins and Health, ed. by W. W. Carmichael, 348
Water in Desert Ecosystems, ed. by D. D. Evans and J. L. Thames, 219
Water-in-Plants Bibliography, ed. by J. Pospíšilová and J. Solárová, Vol. 6 (1980: References No. 6606–8128/AAS–ZOB), 472
Water Stress on Plants, by G. M. Simpson, 472
Watling, R., and N. M. Gregory, Census Catalogue of World Members of the Bolbitiaceae, 195
Watson, L., Sea Guide to Whales of the World, 337
Waymouth, C., et al. (eds.), The Growth Requirements of Vertebrate Cells in Vitro, 313
Weddell Seal: Consummate Diver, by G. L. Kooyman, 209
Weiner, H., et al. (eds.), Brain, Behavior, and Bodily Disease, 87
Weiner, J. S., The Piltdown Forgery, 174
Wellnhofer, P. (ed.), Handbuch der Paläoherpetologie (Encyclopedia of Paleoherpetology), Part 2 (Gymnophiona, Caudata), 450
West, J. B. (ed.), High Altitude Physiology, 210
Western Reserve's Experiment in Medical Education and Its Outcome, by G. Williams, 92
Wharton, C. W., and R. Eisenthal, Molecular Enzymology, 455
Wheat Science: Today and Tomorrow, ed. by L. T. Evans and W. J. Peacock, 197
Wheeler, A., and J. H. Price (eds.), History in the Service of Systematics, 303
Wheeler, D. E. (with H. F. Nijhout), Juvenile Hormone and the Physiological Basis of Insect Polymorphisms, *article*, 109
Whitehead, P., The British Museum (Natural History), 176
Whitson, G. L. (ed.), Nuclear-Cytoplasmic Interactions in the Cell Cycle, 181
Who's Poisoning America?, ed. by R. Nader et al., 226
Widom, J. M., and S. J. Edelstein, Chemistry, 61
Wild Edible Plants of New England: A Field Guide (including Poisonous Plants Often Encountered), by J. Richardson, 473
Wild Mammals of New England, by A. J. Godin, field guide ed., 336
Wildenthal, K. (ed.), Degradative Processes in Heart and Skeletal Muscle, 93
Wilkinson, A. W. (ed.), The Immunology of Infant Feeding, 354
Williams, G., Western Reserve's Experiment in Medical Education and Its Outcome, 92
Williams, G. M., et al. (eds.), The Predictive Value of Short-Term Screening Tests in Carcinogenicity Evaluation, 94
Wills, C., Genetic Variability, 66
Wilson, S. C., and K. C. Hayden, A Natural Collection, 305
Witzmann, R. F., Steroids: Keys to Life, 306

Woman That Never Evolved, by S. B. Hrdy, *lead review*, 297
Woodcock, J., Science in the Making, *commentary*, 161
Woods, S. E., Jr., The Squirrels of Canada, 74
Words of the Lagoon, by R. E. Johannes, 84
Wuketits, F. M., Kausalitätsbegriff und Evolutionstheorie, 65
——, Biologie und Kausalität, 174

X Y Z

Yamaguchi, T. (ed.), Color Atlas of Clinical Parasitology, 358
Young, J. Z., The Life of Vertebrates, 3rd ed., 335
Zaret, T. M., Predation and Freshwater Communities, 220
Zeuthen, T. (ed.), The Application of Ion-Selective Microelectrodes, 458
Zhao-wen, S. (ed.), Nucleic Acids and Proteins, 178
Ziman, J., Teaching and Learning about Science and Society, 173
Zimmerman, E. C. (ed.), Insects of Hawaii, Vol. 14 (Diptera: Cyclorrhapha IV, Series Schizophora, Section Calyptratae), 203
Zoological Sciences, *book reviews*, 72, 200, 335, 475
Zuckerman, B. M., and R. A. Rohde (eds.), Plant Parasitic Nematodes, Vol. 3, 470

THE QUARTERLY REVIEW OF BIOLOGY

FOUNDED IN 1926 BY RAYMOND PEARL

BENTLEY GLASS
Editor

FRANK C. ERK
Editor

GEORGE C. WILLIAMS
Assistant Editor

ALBERT D. CARLSON
Assistant Editor

ROSEMARY G. SMOLKER
Managing Editor

VOLUME 57
1982

Published by
STONY BROOK FOUNDATION, INC.
for
STATE UNIVERSITY OF NEW YORK
AT STONY BROOK

© Copyright 1982
STONY BROOK FOUNDATION, INC.•

Advisory Board

GEORGE W. BEADLE ..... *Pomona, California*
MELBOURNE R. CARRIKER ..... *University of Delaware*
PRESTON CLOUD ..... *University of California at Santa Barbara*
JAMES D. EBERT ..... *Carnegie Institution of Washington*
FRANK FENNER ..... *Australian National University*
HARRY HARRIS ..... *University of Pennsylvania*
JOEL W. HEDGPETH ..... *Santa Rosa, California*
ALLEN KEAST ..... *Queen's University*
DANIEL KOSHLAND ..... *University of California at Berkeley*
JOHN MARCHALONIS ..... *Medical University of South Carolina*
EVERETT C. OLSON ..... *University of California at Los Angeles*
EDMUND D. PELLEGRINO ..... *Georgetown University Medical Center*
STEPHEN ROTH ..... *University of Pennsylvania*
JAMES H. SANG ..... *The University of Sussex*
F. O. SCHMITT ..... *Massachusetts Institute of Technology*
CHARLES H. SOUTHWICK ..... *University of Colorado*
CHARLES WALCOTT ..... *Cornell University*
PAUL WEISS ..... *The Rockefeller University*
GEORGE M. WOODWELL ..... *Marine Biological Laboratory, Woods Hole*

Book-Review Consultants

(all at the State University of New York at Stony Brook)

JOAN S. BRUGGE
EDWARD J. CARPENTER
RUTH S. COWAN
BERNARD S. DUDOCK
DOUGLAS J. FUTUYMA
LEV R. GINZBURG
HARVEY J. KARTEN
EUGENE R. KATZ
ABRAHAM D. KRIKORIAN
EMIL W. MENZEL
JAKOB SCHMIDT
WILLIAM G. VAN DER KLOOT
DAVID E. WEEKS

Readers who need more copies of material from *The Quarterly Review of Biology* than permitted under the guidelines of the doctrine of "fair use" (Title 17 of the United States Code, "Copyrights") may purchase them directly from *The Quarterly Review of Biology* (original stock provided if available, otherwise xerographic copies, $2.50 each article regardless of length); or may obtain permission from the QRB to make the copies themselves (permission fee, 5¢ per page); or may deal by way of their libraries with the Copyright Clearance Center (CCC). The cost of an article obtained from the CCC is given as the last four digits of the coden printed at the bottom of the first page of each article covered by our agreement with the CCC.

For more information about the Copyright Clearance Center, contact the Center at 21 Congress St., Salem, MA 01970 (USA); telephone (617) 744-3350.

The Quarterly Review of Biology (ISSN 0033-5770, USPS 452-280) is published quarterly (March, June, September, and December) by the Stony Brook Foundation, Inc., State University of New York, Stony Brook, NY 11794. Subscriptions are $36 per year (institutions), $25 (individuals), $20 (students). Second class postage paid at Stony Brook, New York and Montpelier, Vermont. POSTMASTER: send address changes to *The Quarterly Review of Biology*, Division of Biological Sciences, State University of New York, Stony Brook, NY 11794.

CONTENTS

No. 1, March 1982

Neotropical *Heliconia* Insect Communities ..... *Richard P. Seifert* 1–28
The Refractory Model: The Logistic Curve and the History of Population Ecology ..... *Sharon Kingsland* 29–52
New Biological Books
Reviews and Brief Notices 53–101
Index to Books Reviewed 103–108

No. 2, June 1982

Juvenile Hormone and the Physiological Basis of Insect Polymorphisms ..... *H. Frederik Nijhout and Diana E. Wheeler* 109–133
Dominance Rank, Copulatory Behavior, and Differential Reproduction ..... *Donald A. Dewsbury* 135–159
Commentary: Science in the Making ..... *John Woodcock* 161–166
New Biological Books
The Lives of Eukaryotic Cells ..... *Lewis Thomas* 167–169
Reviews and Brief Notices ..... *Lewis Thomas* 171–237
Index to Books Reviewed 238–245

No. 3, September 1982

Hormonal and Genetic Regulation of Vitellogenesis in Drosophila ..... *Mary Bownes* 247–274
Is Sociobiology Reactionary? The Political Implications of Inclusive-Fitness Theory ..... *Roger D. Masters* 275–292
Commentary: Ecology of Migration—Is Magnetic Orientation a Reality? ..... *Donald R. Griffin* 293–295
New Biological Books
Another Woman That Never Existed ..... *Donald Symons* 297–300
Cultural and Biological Evolution ..... *Brian Charlesworth* 300–302
Reviews and Brief Notices 303–370
Index to Books Reviewed 371–377

No. 4, December 1982

Numerical Methods for Inferring Evolutionary Trees ..... *Joseph Felsenstein* 379–404
The Evolution of Alloparental Care and Adoption in Mammals and Birds ..... *Marianne L. Riedman* 405–435
New Biological Books
Autobiology ..... *George Gaylord Simpson* 437–444
Opiate Addiction: The Good Old Days ..... *Sidney Cohen* 444–446
Reviews and Brief Notices 447–513
Index to Volume 57 (1982) 515–540